Control Number: 51415

Item Number: 1

Addendum StartPage: 0

Southwestern Electric Power Company
Index of Workpapers
to Mr. Dylan W. D'Ascendis' Direct Testimony and Exhibit

1. Federal Power Comm'n v. Hope Natural Gas Co., 320 U.S. 591, 1944 (FN 01)

2. Bluefield Water Works Improvement Co. v. Public Serv. Comm'n, 262 U.S. 679, 1922 (FN 02)

3. Federal Reserve Press Release, March 15, 2020 (FN 03)

4. Federal Reserve Press Release, April 6, 2020 (FN 04)

5. Federal Reserve Press Release, April 9, 2020 (FN 05)

6. S&P Global Market Intelligence, Trump signs $484B coronavirus relief package into law, April 24, 2020 (FN 06)

7. Morningstar, Correlations Going to 1: Amid Market Collapse, U.S. Stock Fund Factors Show Little Differentiation, March 6, 2020 (FN 12)

8. Blue Chip Economic Indicators, April 10, 2020 (FN 13,14)

9. S&P Global Ratings, COVID-19: The Outlook For North American Regulated Utilities Turns Negative, April 2, 2020 (FN 15,16,17)

10. Moody's Investors Service, Dividends a major source of cash if coronavirus downturn is prolonged, April 6, 2020 (FN 18,19,20)

11. American Electric Power Company Inc., SEC Form 10-K, Dec. 31, 2019 (FN 22,23)

12. Eugene F. Brigham and Joel F. Houston, Fundamentals of Financial Management, Concise 4th Ed., Thomson South-Western, 2004 (FN 25)

13. Pauline M. Ahern, Frank J. Hanley and Richard A. Michelfelder, Ph.D. A New Approach for Estimating the Equity Risk Premium for Public Utilities, The Journal of Regulatory Economics (December 2011), 40:261-278 (FN 28)

14. Engle, Autoregressive conditional heteroscedasticity, 1982 (FN 29)

15. SBBI-2020 Appendix A Tables: Morningstar Stocks, Bonds, Bills, & Inflation 1926-2019 (FN 38,57)

16. SBBI - 2020, at page 10-22, (FN 40)

17. Robert S. Harris and Felicia C. Marston, The Market Risk Premium: Expectational Estimates Using Analysts' Forecasts, Journal of Applied Finance, Vol. 11, No. 1, 2001 (FN 48a)

18. Eugene F. Brigham, Dilip K. Shome, and Steve R. Vinson, The Risk Premium Approach to Measuring a Utility's Cost of Equity, Financial Management, Spring 1985 (FN 48b)

19. Roger A. Morin, New Regulatory Finance, at page 175-176, 189-191 (FN 51,53,54)

20. Eugene F. Fama and Kenneth R. French, The Capital Asset Pricing Model: Theory and Evidence, Journal of Economic Perspectives, Vol. 18, No. 3, Summer 2004 (FN 52,55,56,62)

21. Duff & Phelps Valuation Handbook – U.S. Guide to Cost of Capital, Wiley 2020 (FN 61)

22. Brealey, Richard A. and Myers, Stewart C., Principles of Corporate Finance (McGraw-Hill Book Company, 1996 (FN 63)

23. Brigham, Eugene F., Fundamentals of Financial Management, Fifth Edition (The Dryden Press, 1989 (FN 64)

24. Supporting data from Zacks Investment Research

25. Supporting data from Yahoo! Finance

26. Supporting data from Eviews

27. Supporting data from Moody's Investor Services

28. Supporting data from Standard & Poor's Global Utility Rating Services

29. Supporting data from Value Line Summary and Index.

30. Supporting data from Value Line Standard Edition

31. Supporting data from 2020 Duff & Phelps Cost of Capital Navigator

Supreme Court of the United States
FEDERAL POWER COMMISSION et al.
v.
HOPE NATURAL GAS CO.
CITY OF CLEVELAND
v.
SAME.
Nos. 34 and 35.

Argued Oct. 20, 21, 1943.
Decided Jan. 3, 1944.

Separate proceedings before the Federal Power Commission by such Commission, by the City of Cleveland and the City of Akron, and by Pennsylvania Public Utility Commission wherein the State of West Virginia and its Public Service Commission were permitted to intervene concerning rates charged by Hope Natural Gas Company which were consolidated for hearing. An order fixing rates was reversed and remanded with directions by the Circuit Court of Appeals, 134 F.2d 287, and Federal Power Commission, City of Akron and Pennsylvania Public Utility Commission in one case and the City of Cleveland in another bring certiorari.

Reversed.

Mr. Justice REED, Mr. Justice FRANKFURTER and Mr. Justice JACKSON, dissenting.

On Writs of Certiorari to the United States Circuit Court of Appeals for the Fourth Circuit.

West Headnotes

[1] **Public Utilities 317A 120**

317A Public Utilities
317AII Regulation
317Ak119 Regulation of Charges
317Ak120 k. Nature and Extent in General. Most Cited Cases
(Formerly 317Ak7.1, 317Ak7)

Rate-making is only one species of price-fixing which, like other applications of the police power, may reduce the value of the property regulated, but that does not render the regulation invalid.

[2] **Public Utilities 317A 123**

317A Public Utilities
317AII Regulation
317Ak119 Regulation of Charges
317Ak123 k. Reasonableness of Charges in General. Most Cited Cases
(Formerly 317Ak7.4, 317Ak7)

Rates cannot be made to depend upon fair value, which is the end product of the process of rate-making and not the starting point, when the value of the going enterprise depends on earnings under whatever rates may be anticipated.

[3] **Gas 190 14.3(2)**

190 Gas
190k14 Charges
190k14.3 Administrative Regulation
190k14.3(2) k. Federal Power Commission. Most Cited Cases
(Formerly 190k14(1))

The rate-making function of the Federal Power Commission under the Natural Gas Act involves the making of pragmatic adjustments, and the Commission is not bound to the use of any single formula or combination of formulae in determining rates. Natural Gas Act, § § 4(a), 5(a), 6, 15 U.S.C.A. § § 717c(a), 717d(a), 717e.

[4] **Gas 190 14.5(6)**

190 Gas
190k14 Charges
190k14.5 Judicial Review and Enforcement of Regulations
190k14.5(6) k. Scope of Review and Trial De Novo. Most Cited Cases
(Formerly 190k14(1))

When order of Federal Power Commission fixing natural gas rates is challenged in the courts, the question is whether order viewed in its entirety meets the requirements of the Natural Gas Act. Natural Gas Act, § § 4(a), 5(a), 6, 19(b), 15 U.S.C.A. § § 717c(a), 717d(a), 717e, 717r(b).

[5] **Gas 190 14.4(1)**

190 Gas
190k14 Charges
190k14.4 Reasonableness of Charges

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

190k14.4(1) k. In General. Most Cited Cases

(Formerly 190k14(1))

Under the statutory standard that natural gas rates shall be "just and reasonable" it is the result reached and not the method employed that is controlling. Natural Gas Act § § 4(a), 5(a), 15 U.S.C.A. § § 717c(a), 717d(a).

[6] **Gas 190 14.5(6)**

190 Gas

190k14 Charges

190k14.5 Judicial Review and Enforcement of Regulations

190k14.5(6) k. Scope of Review and Trial De Novo. Most Cited Cases

(Formerly 190k14(1))

If the total effect of natural gas rates fixed by Federal Power Commission cannot be said to be unjust and unreasonable, judicial inquiry under the Natural Gas Act is at an end. Natural Gas Act, § § 4(a), 5(a), 6, 19(b), 15 U.S.C.A. § § 717c(a), 717d(a), 717e, 717r(b).

[7] **Gas 190 14.5(7)**

190 Gas

190k14 Charges

190k14.5 Judicial Review and Enforcement of Regulations

190k14.5(7) k. Presumptions. Most Cited Cases

(Formerly 190k14(1))

An order of the Federal Power Commission fixing rates for natural gas is the product of expert judgment, which carries a presumption of validity, and one who would upset the rate must make a convincing showing that it is invalid because it is unjust and unreasonable in its consequences. Natural Gas Act, § § 4(a), 5(a), 6, 19(b), 15 U.S.C.A. § § 717c(a), 717d(a), 717e, 717r(b).

[8] **Gas 190 14.4(1)**

190 Gas

190k14 Charges

190k14.4 Reasonableness of Charges

190k14.4(1) k. In General. Most Cited Cases

(Formerly 190k14(1))

The fixing of just and reasonable rates for natural gas by the Federal Power Commission involves a balancing of the investor and the consumer interests. Natural Gas Act, § § 4(a), 5(a), 15 U.S.C.A. § § 717c(a), 717d(a).

[9] **Gas 190 14.4(9)**

190 Gas

190k14 Charges

190k14.4 Reasonableness of Charges

190k14.4(9) k. Depreciation and Depletion. Most Cited Cases

(Formerly 190k14(1))

As respects rates for natural gas, from the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business, which includes service on the debt and dividends on stock, and by such standard the return to the equity owner should be commensurate with the terms on investments in other enterprises having corresponding risks, and such returns should be sufficient to assure confidence in the financial integrity of the enterprise so as to maintain its credit and to attract capital. Natural Gas Act, § § 4(a), 5(a), 15 U.S.C.A. § § 717c(a), 717d(a).

[10] **Gas 190 14.4(9)**

190 Gas

190k14 Charges

190k14.4 Reasonableness of Charges

190k14.4(9) k. Depreciation and Depletion. Most Cited Cases

(Formerly 190k14(1))

The fixing by the Federal Power Commission of a rate of return that permitted a natural gas company to earn $2,191,314 annually was supported by substantial evidence. Natural Gas Act, § § 4(a), 5(a), 6, 19(b), 15 U.S.C.A. § § 717c(a), 717d(a), 717e, 717r(b).

[11] **Gas 190 14.4(9)**

190 Gas

190k14 Charges

190k14.4 Reasonableness of Charges

190k14.4(9) k. Depreciation and Depletion. Most Cited Cases

(Formerly 190k14(1))

Rates which enable a natural gas company to operate successfully, to maintain its financial integrity, to attract capital and to compensate its investors for the risks assumed cannot be condemned as invalid, even though they might produce only a meager return on the so-called "fair value" rate base. Natural Gas Act,

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

§ § 4(a), 5(a), 6, 19(b), 15 U.S.C.A. § § 717c(a), 717d(a), 717e, 717r(b).

[12] **Gas 190 14.4(4)**

190 Gas
190k14 Charges
190k14.4 Reasonableness of Charges
190k14.4(4) k. Method of Valuation. Most Cited Cases
(Formerly 190k14(1))

A return of only 3 27/100 per cent. on alleged rate base computed on reproduction cost new to natural gas company earning an annual average return of about 9 per cent. on average investment and satisfied with existing gas rates suggests an inflation of the base on which the rate had been computed, and justified Federal Power Commission in rejecting reproduction cost as the measure of the rate base. Natural Gas Act, § § 4(a), 5(a), 15 U.S.C.A. § § 717c(a), 717d(a).

[13] **Gas 190 14.4(9)**

190 Gas
190k14 Charges
190k14.4 Reasonableness of Charges
190k14.4(9) k. Depreciation and Depletion. Most Cited Cases
(Formerly 190k14(1))

There is no constitutional requirement that owner who engages in a wasting-asset business of limited life shall receive at the end more than he has put into it, and such rule is applicable to a natural gas company since the ultimate exhaustion of its supply of gas is inevitable. Natural Gas Act, § § 4(a), 5(a), 6, 19(b), 15 U.S.C.A. § § 717c(a), 717d(a), 717e, 717r(b).

[14] **Gas 190 14.4(9)**

190 Gas
190k14 Charges
190k14.4 Reasonableness of Charges
190k14.4(9) k. Depreciation and Depletion. Most Cited Cases
(Formerly 190k14(1))

In fixing natural gas rate the basing of annual depreciation on cost is proper since by such procedure the utility is made whole and the integrity of its investment is maintained, and no more is required. Natural Gas Act, § § 4(a), 5(a), 6, 19(b), 15 U.S.C.A. § § 717c(a), 717d(a), 717e, 717r(b).

[15] **Gas 190 14.3(4)**

190 Gas
190k14 Charges
190k14.3 Administrative Regulation
190k14.3(4) k. Findings and Orders. Most Cited Cases
(Formerly 190k14(1))

There are no constitutional requirements more exacting than the standards of the Natural Gas Act which are that gas rates shall be just and reasonable, and a rate order which conforms with the act is valid. Natural Gas Act, § § 4(a), 5(a), 6, 19(b), 15 U.S.C.A. § § 717c(a), 717d(a), 717e, 717r(b).

[16] **Commerce 83 62.2**

83 Commerce
83II Application to Particular Subjects and Methods of Regulation
83II(B) Conduct of Business in General
83k62.2 k. Gas. Most Cited Cases
(Formerly 83k13)

The purpose of the Natural Gas Act was to provide through the exercise of the national power over interstate commerce an agency for regulating the wholesale distribution to public service companies of natural gas moving in interstate commerce not subject to certain types of state regulation, and the act was not intended to take any authority from state commissions or to usurp state regulatory authority. Natural Gas Act, § 1 et seq., 15 U.S.C.A. § 717 et seq.

[17] **Mines and Minerals 260 92.5(3)**

260 Mines and Minerals
260III Operation of Mines, Quarries, and Wells
260III(A) Statutory and Official Regulations
260k92.5 Federal Law and Regulations
260k92.5(3) k. Oil and Gas. Most Cited Cases
(Formerly 260k92.7, 260k92)

Under the Natural Gas Act, the Federal Power Commission has no authority over the production or gathering of natural gas. Natural Gas Act, § 1(b), 15 U.S.C.A. § 717(b).

[18] **Gas 190 14.1(1)**

190 Gas
190k14 Charges
190k14.1 In General
190k14.1(1) k. In General; Amount and

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

Regulation. Most Cited Cases
(Formerly 190k14(1))
The primary aim of the Natural Gas Act was to protect consumers against exploitation at the hands of natural gas companies and holding companies owning a majority of the pipe-line mileage which moved gas in interstate commerce and against which state commissions, independent producers and communities were growing quite helpless. Natural Gas Act, § § 4, 6-10, 14, 15 U.S.C.A. § § 717c, 717e-717i, 717m.

[19] **Gas 190 14.1(1)**

190 Gas
190k14 Charges
190k14.1 In General
190k14.1(1) k. In General; Amount and Regulation. Most Cited Cases
(Formerly 190k14(1))
Apart from the express exemptions contained in § 7 of the Natural Gas Act considerations of conservation are material where abandonment or extensions of facilities or service by natural gas companies are involved, but exploitation of consumers by private operators through maintenance of high rates cannot be continued because of the indirect benefits derived therefrom by a state containing natural gas deposits. Natural Gas Act, § § 4, 5, and § 7 as amended 15 U.S.C.A. § § 717c, 717d, 717f.

[20] **Commerce 83 62.2**

83 Commerce
83II Application to Particular Subjects and Methods of Regulation
83II(B) Conduct of Business in General
83k62.2 k. Gas. Most Cited Cases
(Formerly 83k13)
A limitation on the net earnings of a natural gas company from its interstate business is not a limitation on the power of the producing state, either to safeguard its tax revenues from such industry, or to protect the interests of those who sell their gas to the interstate operator, particularly where the return allowed the company by the Federal Power Commission was a net return after all such charges. Natural Gas Act, § § 4, 5, and § 7, as amended, 15 U.S.C.A. § § 717c, 717d, 717f.

[21] **Gas 190 14.4(1)**

190 Gas
190k14 Charges
190k14.4 Reasonableness of Charges
190k14.4(1) k. In General. Most Cited Cases
(Formerly 190k14(1))
The Natural Gas Act granting Federal Power Commission power to fix "just and reasonable rates" does not include the power to fix rates which will disallow or discourage resales for industrial use. Natural Gas Act, § § 4(a), 5(a), 15 U.S.C.A. § § 717c(a), 717d(a).

[22] **Gas 190 14.4(1)**

190 Gas
190k14 Charges
190k14.4 Reasonableness of Charges
190k14.4(1) k. In General. Most Cited Cases
(Formerly 190k14(1))
The wasting-asset nature of the natural gas industry does not require the maintenance of the level of rates so that natural gas companies can make a greater profit on each unit of gas sold. Natural Gas Act, § § 4(a), 5(a), 15 U.S.C.A. § § 717c(a), 717d(a).

[23] **Federal Courts 170B 452**

170B Federal Courts
170BVII Supreme Court
170BVII(B) Review of Decisions of Courts of Appeals
170Bk452 k. Certiorari in General. Most Cited Cases
(Formerly 106k383(1))
Where the Federal Power Commission made no findings as to any discrimination or unreasonable differences in rates, and its failure was not challenged in the petition to review, and had not been raised or argued by any party, the problem of discrimination was not open to review by the Supreme Court on certiorari. Natural Gas Act, § 4(b), 15 U.S.C.A. § 717c(b).

[24] **Constitutional Law 92 74**

92 Constitutional Law
92III Distribution of Governmental Powers and Functions
92III(B) Judicial Powers and Functions
92k71 Encroachment on Executive
92k74 k. Powers, Duties, and Acts Under Legislative Authority. Most Cited Cases
(Formerly 15Ak226)
Congress has entrusted the administration of the

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

Natural Gas Act to the Federal Power Commission and not to the courts, and apart from the requirements of judicial review, it is not for the Supreme Court to advise the Commission how to discharge its functions. Natural Gas Act, § § 1 et seq., 19(b), 15 U.S.C.A. § § 717 et seq., 717r(b).

[25] **Gas 190 14.5(3)**

190 Gas
190k14 Charges
190k14.5 Judicial Review and Enforcement of Regulations
190k14.5(3) k. Decisions Reviewable. Most Cited Cases
(Formerly 190k14(1))

Under the Natural Gas Act, where order sought to be reviewed does not of itself adversely affect complainant but only affects his rights adversely on the contingency of future administrative action, the order is not reviewable, and resort to the courts in such situation is either premature or wholly beyond the province of such courts. Natural Gas Act, § 19(b), 15 U.S.C.A. § 717r(b).

[26] **Gas 190 14.5(4)**

190 Gas
190k14 Charges
190k14.5 Judicial Review and Enforcement of Regulations
190k14.5(4) k. Persons Entitled to Relief; Parties. Most Cited Cases
(Formerly 190k14(1))

Findings of the Federal Power Commission on lawfulness of past natural gas rates, which the Commission was without power to enforce, were not reviewable under the Natural Gas Act giving any "party aggrieved" by an order of the Commission the right of review. Natural Gas Act, § 19(b), 15 U.S.C.A. § 717r(b).

****283 *592** Mr. Francis M. Shea, Asst. Atty. Gen., for petitioners Federal Power Com'n and others.
***593** Mr. Spencer W. Reeder, of Cleveland, Ohio, for petitioner City of cleveland.
Mr. William B. Cockley, of Cleveland, Ohio, for respondent.
Mr. M. M. Neeley, of Charleston, W. Va., for State of West Virginia, as amicus curiae by special leave of Court.

Mr. Justice DOUGLAS delivered the opinion of the Court.
The primary issue in these cases concerns the validity under the Natural Gas Act of 1938, 52 Stat. 821, 15 U.S.C. s 717 et seq., 15 U.S.C.A. s 717 et seq., of a rate order issued by the Federal Power Commission reducing the rates chargeable by Hope Natural Gas Co., 44 P.U.R.,N.S., 1. On a petition for review of the order made pursuant to s 19(b) of the Act, the ***594** Circuit Court of Appeals set it aside, one judge dissenting. 4 Cir., 134 F.2d 287. The cases ****284** are here on petitions for writs of certiorari which we granted because of the public importance of the questions presented. City of Cleveland v. Hope Natural Gas Co., 319 U.S. 735, 63 S.Ct. 1165.

Hope is a West Virginia corporation organized in 1898. It is a wholly owned subsidiary of Standard Oil Co. (N.J.). Since the date of its organization, it has been in the business of producing, purchasing and marketing natural gas in that state. FN1 It sells some of that gas to local consumers in West Virginia. But the great bulk of it goes to five customer companies which receive it at the West Virginia line and distribute it in Ohio and in Pennsylvania. FN2 In July, 1938, the cities of Cleveland and Akron filed complaints with the Commission charging that the rates collected by Hope from East Ohio Gas Co. (an affiliate of Hope which distributes gas in Ohio) were excessive and unreasonable. Later in 1938 the Commission on its own motion instituted an investigation to determine the reasonableness of all of Hope's interstate rates. In March ***595** 1939 the Public Utility Commission of Pennsylvania filed a complaint with the Commission charging that the rates collected by Hope from Peoples Natural Gas Co. (an affiliate of Hope distributing gas in Pennsylvania) and two non-affiliated companies were unreasonable. The City of Cleveland asked that the challenged rates be declared unlawful and that just and reasonable rates be determined from June 30, 1939 to the date of the Commission's order. The latter finding was requested in aid of state regulation and to afford the Public Utilities Commission of Ohio a proper basic for disposition of a fund collected by East Ohio under bond from Ohio consumers since June 30, 1939. The cases were consolidated and hearings were held.

FN1 Hope produces about one-third of its annual gas requirements and purchases the rest under some 300 contracts.

FN2 These five companies are the East Ohio Gas Co., the Peoples Natural Gas Co., the

River Gas Co., the Fayette County Gas Co., and the Manufacturers Light & Heat Co. The first three of these companies are, like Hope, subsidiaries of Standard Oil Co. (N.J.). East Ohio and River distribute gas in Ohio, the other three in Pennsylvania. Hope's approximate sales in m.c.f. for 1940 may be classified as follows:

Local West Virginia.	
sales.	11,000,000
East Ohio.	40,000,000
Peoples.	10,000,000
River.	400,000
Fayette.	860,000
Manufacturers.	2,000,000

Local West Virginia

Hope's natural gas is processed by Hope Construction & Refining Co., an affiliate, for the extraction of gasoline and butane. Domestic Coke Corp., another affiliate, sells coke-oven gas to Hope for boiler fuel.

On May 26, 1942, the Commission entered its order and made its findings. Its order required Hope to decrease its future interstate rates so as to reflect a reduction, on an annual basis of not less than $3,609,857 in operating revenues. And it established 'just and reasonable' average rates per m.c.f. for each of the five customer companies. FN3 In response to the prayer of the City of Cleveland the Commission also made findings as to the lawfulness of past rates, although concededly it had no authority under the Act to fix past rates or to award reparations. 44 P.U.R.,U.S., at page 34. It found that the rates collected by Hope from East Ohio were unjust, unreasonable, excessive and therefore unlawful, by $830,892 during 1939, $3,219,551 during 1940, and $2,815,789 on an annual basis since 1940. It further found that just, reasonable, and lawful rates for gas sold by Hope to East Ohio for resale for ultimate public consumption were those required ***596** to produce $11,528,608 for 1939, $11,507,185 for 1940 and $11.910,947 annually since 1940.

FN3 These required minimum reductions of 7¢ per m.c.f. from the 36.5¢ and 35.5¢ rates previously charged East Ohio and Peoples, respectively, and 3¢ per m.c.f. from the 31.5¢ rate previously charged Fayette and Manufacturers.

The Commission established an interstate rate base of $33,712,526 which, it found, represented the 'actual legitimate cost' of the company's interstate property less depletion and depreciation and plus unoperated acreage, working capital and future net capital additions. The Commission, beginning with book cost, made ****285** certain adjustments not necessary to relate here and found the 'actual legitimate cost' of the plant in interstate service to be $51,957,416, as of December 31, 1940. It deducted accrued depletion and depreciation, which it found to be $22,328,016 on an 'economic-service-life' basis. And it added $1,392,021 for future net capital additions, $566,105 for useful unoperated acreage, and $2,125,000 for working capital. It used 1940 as a test year to estimate future revenues and expenses. It allowed over $16,000,000 as annual operating expenses-about $1,300,000 for taxes, $1,460,000 for depletion and depreciation, $600,000 for exploration and development costs, $8,500,000 for gas purchased. The Commission allowed a net increase of $421,160 over 1940 operating expenses, which amount was to take care of future increase in wages, in West Virginia property taxes, and in exploration and development costs. The total amount of deductions allowed from interstate revenues was $13,495,584.

Hope introduced evidence from which it estimated reproduction cost of the property at $97,000,000. It also presented a so-called trended 'original cost' estimate which exceeded $105,000,000. The latter was designed 'to indicate what the original cost of the property would have been if 1938 material and labor prices had prevailed throughout the whole period of the piece-meal construction of the company's property since 1898.' 44 P.U.R.,N.S., at pages 8, 9. Hope estimated by the 'percent condition' method accrued depreciation at about 35% of ***597** reproduction cost new. On that basis Hope contended for a rate base of $66,000,000. The Commission refused to place any reliance on reproduction cost new, saying that it was 'not predicated upon facts' and was 'too conjectural and illusory to be given any weight in these proceedings.' Id., 44 P.U.R.,U.S., at page 8. It likewise refused to give any 'probative value' to trended 'original cost' since it was 'not founded in fact' but was 'basically erroneous' and produced 'irrational results.' Id., 44 P.U.R., N.S., at page 9. In determining the amount of accrued depletion and depreciation the Commission, following Lindheimer v. Illinois Bell

© 2006 Thomson/West. No Claim to Orig. U.S. Govt. Works.

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

Telephone Co., 292 U.S. 151, 167-169, 54 S.Ct. 658, 664-666, 78 L.Ed. 1182; Federal Power Commission v. Natural Gas Pipeline Co., 315 U.S. 575, 592, 593, 62 S.Ct. 736, 745, 746, 86 L.Ed. 1037, based its computation on 'actual legitimate cost'. It found that Hope during the years when its business was not under regulation did not observe 'sound depreciation and depletion practices' but 'actually accumulated an excessive reserve' FN4 of about $46,000,000. Id., 44 P.U.R.,N.S., at page 18. One member of the Commission thought that the entire amount of the reserve should be deducted from 'actual legitimate cost' in determining the rate base. FN5 The majority of the ***598** Commission concluded, however, that where, as here, a business is brought under regulation for the first time and where incorrect depreciation and depletion practices have prevailed, the deduction of the reserve requirement (actual existing depreciation and depletion) rather than the excessive reserve should be made so as to ****286** lay 'a sound basis for future regulation and control of rates.' Id., 44 P.U.R.,N.S., at page 18. As we have pointed out, it determined accrued depletion and depreciation to be $22,328,016; and it allowed approximately $1,460,000 as the annual operating expense for depletion and depreciation. FN6

FN4 The book reserve for interstate plant amounted at the end of 1938 to about $18,000,000 more than the amount determined by the Commission as the proper reserve requirement. The Commission also noted that 'twice in the past the company has transferred amounts aggregating $7,500,000 from the depreciation and depletion reserve to surplus. When these latter adjustments are taken into account, the excess becomes $25,500,000, which has been exacted from the ratepayers over and above the amount required to cover the consumption of property in the service rendered and thus to keep the investment unimpaired.' 44 P.U.R.,N.S., at page 22.

FN5 That contention was based on the fact that 'every single dollar in the depreciation and depletion reserves' was taken 'from gross operating revenues whose only source was the amounts charged customers in the past for natural gas. It is, therefore, a fact that the depreciation and depletion reserves have been contributed by the customers and do not represent any investment by Hope.' Id., 44 P.U.R.,N.S., at page 40. And see Railroad Commission v. Cumberland Tel. & T. Co., 212 U.S. 414, 424, 425, 29 S.Ct. 357, 361, 362, 53 L.Ed. 577; 2 Bonbright, Valuation of Property (1937), p. 1139.

FN6 The Commission noted that the case was 'free from the usual complexities involved in the estimate of gas reserves because the geologists for the company and the Commission presented estimates of the remaining recoverable gas reserves which were about one per cent apart.' 44 P.U.R.,N.S., at pages 19, 20.

The Commission utilized the 'straight-line-basis' for determining the depreciation and depletion reserve requirements. It used estimates of the average service lives of the property by classes based in part on an inspection of the physical condition of the property. And studies were made of Hope's retirement experience and maintenance policies over the years. The average service lives of the various classes of property were converted into depreciation rates and then applied to the cost of the property to ascertain the portion of the cost which had expired in rendering the service.

The record in the present case shows that Hope is on the lookout for new sources of supply of natural gas and is contemplating an extension of its pipe line into Louisiana for that purpose. The Commission recognized in fixing the rates of depreciation that much material may be used again when various present sources of gas supply are exhausted, thus giving that property more than scrap value at the end of its present use.

Hope's estimate of original cost was about $69,735,000-approximately $17,000,000 more than the amount found by the Commission. The item of $17,000,000 was made up largely of expenditures which prior to December 31, 1938, were charged to operating expenses. Chief among those expenditures was some $12,600,000 expended ***599** in well-drilling prior to 1923. Most of that sum was expended by Hope for labor, use of drilling-rigs, hauling, and similar costs of well-drilling. Prior to 1923 Hope followed the general practice of the natural gas industry and charged the cost of drilling wells to operating expenses. Hope continued that practice until the Public Service Commission of West Virginia in 1923 required it to capitalize such expenditures, as does the Commission under its present Uniform System of Accounts. FN7 The Commission refused to add such items to the rate base stating that 'No greater injustice to consumers could be done than to allow items as operating expenses and at a later date include them in the rate base, thereby placing multiple charges upon the consumers.' Id., 44 P.U.R.,N.S., at page 12. For the same reason the Commission excluded from the rate base about $1,600,000 of expenditures on properties which Hope acquired from other utilities, the latter having charged those payments to operating expenses. The Commission disallowed certain other overhead items amounting to

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

over $3,000,000 which also had been previously charged to operating expenses. And it refused to add some $632,000 as interest during construction since no interest was in fact paid.

FN7 See Uniform System of Accounts prescribed for Natural Gas Companies effective January 1, 1940, Account No. 332.1.

Hope contended that it should be allowed a return of not less than 8%. The Commission found that an 8% return would be unreasonable but that 6 1/2% was a fair rate of return. That rate of return, applied to the rate base of $33,712,526, would produce $2,191,314 annually, as compared with the present income of not less than $5,801,171.

The Circuit Court of Appeals set aside the order of the Commission for the following reasons. (1) It held that the rate base should reflect the 'present fair value' of the ***600** property, that the Commission in determining the 'value' should have considered reproduction cost and trended original cost, and that 'actual legitimate cost' (prudent investment) was not the proper measure of 'fair value' where price levels had changed since the investment. (2) It concluded that the well-drilling costs and overhead items in the amount of some $17,000,000 should have been included in the rate base. (3) It held that accrued depletion and depreciation and the annual allowance for that expense should be computed on the basis of 'present fair value' of the property not on the basis of 'actual legitimate cost'.

****287** The Circuit Court of Appeals also held that the Commission had no power to make findings as to past rates in aid of state regulation. But it concluded that those findings were proper as a step in the process of fixing future rates. Viewed in that light, however, the findings were deemed to be invalidated by the same errors which vitiated the findings on which the rate order was based.

Order Reducing Rates. Congress has provided in s 4(a) of the Natural Gas Act that all natural gas rates subject to the jurisdiction of the Commission 'shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful.' Sec. 5(a) gives the Commission the power, after hearing, to determine the 'just and reasonable rate' to be thereafter observed and to fix the rate by order. Sec. 5(a) also empowers the Commission to order a 'decrease where existing rates are unjust * * * unlawful, or are not the lowest reasonable rates.' And Congress has provided in s 19(b) that on review of these rate orders the 'finding of the Commission as to the facts, if supported by substantial evidence, shall be conclusive.' Congress, however, has provided no formula by which the 'just and reasonable' rate is to be determined. It has not filled in the ***601** details of the general prescription FN8 of s 4(a) and s 5(a). It has not expressed in a specific rule the fixed principle of 'just and reasonable'.

FN8. Sec. 6 of the Act comes the closest to supplying any definite criteria for rate making. It provides in subsection (a) that, 'The Commission may investigate the ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property.' Subsection (b) provides that every natural-gas company on request shall file with the Commission a statement of the 'original cost' of its property and shall keep the Commission informed regarding the 'cost' of all additions, etc.

[1] [2] When we sustained the constitutionality of the Natural Gas Act in the Natural Gas Pipeline Co. case, we stated that the 'authority of Congress to regulate the prices of commodities in interstate commerce is at least as great under the Fifth Amendment as is that of the states under the Fourteenth to regulate the prices of commodities in intrastate commerce.' 315 U.S. at page 582, 62 S.Ct. at page 741, 86 L.Ed 1037. Rate-making is indeed but one species of price-fixing. Munn v. Illinois, 94 U.S. 113, 134, 24 L.Ed 77. The fixing of prices, like other applications of the police power, may reduce the value of the property which is being regulated. But the fact that the value is reduced does not mean that the regulation is invalid. Block v. Hirsh, 256 U.S. 135, 155-157, 41 S.Ct 458, 459, 460, 65 L.Ed. 865, 16 A.L.R 165; Nebbia v. New York, 291 U.S. 502, 523-539, 54 S.Ct 505, 509-517, 78 L.Ed 940, 89 A.L.R. 1469, and cases cited. It does, however, indicate that 'fair value' is the end product of the process of rate-making not the starting point as the Circuit Court of Appeals held. The heart of the matter is that rates cannot be made to depend upon 'fair value' when the value of the going enterprise depends on earnings under whatever rates may be anticipated. FN9

FN9 We recently stated that the meaning of the word 'value' is to be gathered 'from the purpose for which a valuation is being made. Thus the question in a valuation for rate making is how much a utility will be allowed to earn. The basic question in a valuation for reorganization purposes is how much the enterprise in all probability can earn.' Institutional Investors v. Chicago, M., St. P. & P.R. Co. 318 U.S. 523, 540, 63 S.Ct. 727, 738.

***602** [3] [4] [5] [6] [7] We held in Federal Power Commission v. Natural Gas Pipeline Co., supra, that the Commission was not bound to the use of any single formula or combination of formulae in determining rates. Its rate-making function, moreover, involves the making of 'pragmatic adjustments.' Id., 315 U.S. at page 586, 62 S.Ct. at page 743, 86 L.Ed. 1037. And when the Commission's order is challenged in the courts, the question is whether that order 'viewed in its entirety' meets the requirements of the Act. Id., 315 U.S. at page 586, 62 S.Ct. at page 743, 86 L.Ed. 1037. Under the statutory standard of 'just and reasonable' it is the result reached not the method employed which is controlling. Cf. ****288**Los Angeles Gas & Electric Corp. v. Railroad Commission, 289 U.S. 287, 304, 305, 314, 53 S.Ct. 637, 643, 644, 647, 77 L.Ed. 1180; West Ohio Gas Co. v. Public Utilities Commission (No. 1), 294 U.S. 63, 70, 55 S.Ct. 316, 320, 79 L.Ed. 761; West v. Chesapeake & Potomac Tel. Co., 295 U.S. 662, 692, 693, 55 S.Ct. 894, 906, 907, 79 L.Ed. 1640 (dissenting opinion). It is not theory but the impact of the rate order which counts. If the total effect of the rate order cannot be said to be unjust and unreasonable, judicial inquiry under the Act is at an end. The fact that the method employed to reach that result may contain infirmities is not then important. Moreover, the Commission's order does not become suspect by reason of the fact that it is challenged. It is the product of expert judgment which carries a presumption of validity. And he who would upset the rate order under the Act carries the heavy burden of making a convincing showing that it is invalid because it is unjust and unreasonable in its consequences. Cf. Railroad Commission v. Cumberland Tel. & T. Co., 212 U.S. 414, 29 S.Ct. 357, 53 L.Ed. 577; Lindheimer v. Illinois Bell Tel. Co., supra, 292 U.S. at pages 164, 169, 54 S.Ct. at pages 663, 665, 78 L.Ed. 1182; Railroad Commission v. Pacific Gas & E. Co., 302 U.S. 388, 401, 58 S.Ct. 334, 341, 82 L.Ed. 319.

***603** [8] [9] The rate-making process under the Act, i.e., the fixing of 'just and reasonable' rates, involves a balancing of the investor and the consumer interests. Thus we stated in the Natural Gas Pipeline Co. case that 'regulation does not insure that the business shall produce net revenues.' 315 U.S. at page 590, 62 S.Ct. at page 745, 86 L.Ed. 1037. But such considerations aside, the investor interest has a legitimate concern with the financial integrity of the company whose rates are being regulated. From the investor or company point of view it is important that there be enough revenue not only for operating expenses but also for the capital costs of the business. These include service on the debt and dividends on the stock. Cf. Chicago & Grand Trunk R. Co. v. Wellman, 143 U.S. 339, 345, 346, 12 S.Ct. 400, 402, 36 L.Ed. 176. By that standard the return to the equity owner should be commensurate with returns on investments in other enterprises having corresponding risks. That return, moreover, should be sufficient to assure confidence in the financial integrity of the enterprise, so as to maintain its credit and to attract capital. See State of Missouri ex rel. South-western Bell Tel. Co. v. Public Service Commission, 262 U.S. 276, 291, 43 S.Ct. 544, 547, 67 L.Ed. 981, 31 A.L.R. 807 (Mr. Justice Brandeis concurring). The conditions under which more or less might be allowed are not important here. Nor is it important to this case to determine the various permissible ways in which any rate base on which the return is computed might be arrived at. For we are of the view that the end result in this case cannot be condemned under the Act as unjust and unreasonable from the investor or company viewpoint.

We have already noted that Hope is a wholly owned subsidiary of the Standard Oil Co. (N.J.). It has no securities outstanding except stock. All of that stock has been owned by Standard since 1908. The par amount presently outstanding is approximately $28,000,000 as compared with the rate base of $33,712,526 established by ***604** the Commission. Of the total outstanding stock $11,000,000 was issued in stock dividends. The balance, or about $17,000,000, was issued for cash or other assets. During the four decades of its operations Hope has paid over $97,000,000 in cash dividends. It had, moreover, accumulated by 1940 an earned surplus of about $8,000,000. It had thus earned the total investment in the company nearly seven times. Down to 1940 it earned over 20% per year on the average annual amount of its capital stock issued for cash or other assets. On an average invested capital of some $23,000,000 Hope's average earnings have been about 12% a year. And during this period it had accumulated in addition reserves for depletion and depreciation of about $46,000,000. Furthermore, during 1939, 1940 and 1941, Hope paid dividends of 10% on its stock. And in the year 1942, during about half of which the lower rates were in effect, it paid dividends of 7 1/2%. From 1939-1942 its earned surplus increased from $5,250,000 to about $13,700,000, i.e., to almost half the par value of its outstanding stock.

As we have noted, the Commission fixed a rate of return which permits Hope to earn $2,191,314 annually. In determining that amount it stressed the importance of maintaining the financial integrity of the ****289** company. It considered the financial history of Hope and a vast

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

array of data bearing on the natural gas industry, related businesses, and general economic conditions. It noted that the yields on better issues of bonds of natural gas companies sold in the last few years were 'close to 3 per cent', 44 P.U.R.,N.S., at page 33. It stated that the company was a 'seasoned enterprise whose risks have been minimized' by adequate provisions for depletion and depreciation (past and present) with 'concurrent high profits', by 'protected established markets, through affiliated distribution companies, in populous and industralized areas', and by a supply of gas locally to meet all requirements,***605** 'except on certain peak days in the winter, which it is feasible to supplement in the future with gas from other sources.' Id., 44 P.U.R.,N.S., at page 33. The Commission concluded, 'The company's efficient management, established markets, financial record, affiliations, and its prospective business place it in a strong position to attract capital upon favorable terms when it is required.' Id., 44 P.U.R.,N.S., at page 33.

[10] [11] [12] In view of these various considerations we cannot say that an annual return of $2,191,314 is not 'just and reasonable' within the meaning of the Act. Rates which enable the company to operate successfully, to maintain its financial integrity, to attract capital, and to compensate its investors for the risks assumed certainly cannot be condemned as invalid, even though they might produce only a meager return on the so-called 'fair value' rate base. In that connection it will be recalled that Hope contended for a rate base of $66,000,000 computed on reproduction cost new. The Commission points out that if that rate base were accepted, Hope's average rate of return for the four-year period from 1937-1940 would amount to 3.27%. During that period Hope earned an annual average return of about 9% on the average investment. It asked for no rate increases. Its properties were well maintained and operated. As the Commission says such a modest rate of 3.27% suggests an 'inflation of the base on which the rate has been computed.' Dayton Power & Light Co. v. Public Utilities Commission, 292 U.S. 290, 312, 54 S.Ct. 647, 657, 78 L.Ed. 1267. Cf. Lindheimer v. Illinois Bell Tel. Co., supra, 292 U.S. at page 164, 54 S.Ct. at page 663, 78 L.Ed. 1182. The incongruity between the actual operations and the return computed on the basis of reproduction cost suggests that the Commission was wholly justified in rejecting the latter as the measure of the rate base.

In view of this disposition of the controversy we need not stop to inquire whether the failure of the Commission to add the $17,000,000 of well-drilling and other costs to ***606** the rate base was consistent with the prudent investment theory as developed and applied in particular cases.

[13] [14] [15] Only a word need be added respecting depletion and depreciation. We held in the Natural Gas Pipeline Co. case that there was no constitutional requirement 'that the owner who embarks in a wasting-asset business of limited life shall receive at the end more than he has put into it.' 315 U.S. at page 593, 62 S.Ct. at page 746, 86 L.Ed. 1037. The Circuit Court of Appeals did not think that that rule was applicable here because Hope was a utility required to continue its service to the public and not scheduled to end its business on a day certain as was stipulated to be true of the Natural Gas Pipeline Co. But that distinction is quite immaterial. The ultimate exhaustion of the supply is inevitable in the case of all natural gas companies. Moreover, this Court recognized in Lindheimer v. Illinois Bell Tel. Co., supra, the propriety of basing annual depreciation on cost. FN10 By such a procedure the ****290** utility is made whole and the integrity of its investment maintained. FN11 No more is required. FN12 We cannot approve the contrary holding ***607** of United Railways & Electric Co. v. West, 280 U.S. 234, 253, 254, 50 S.Ct. 123, 126, 127, 74 L.Ed. 390. Since there are no constitutional requirements more exacting than the standards of the Act, a rate order which conforms to the latter does not run afoul of the former.

FN10 Chief Justice Hughes said in that case (292 U.S. at pages 168, 169, 54 S.Ct. at page 665, 78 L.Ed. 1182) 'If the predictions of service life were entirely accurate and retirements were made when and as these predictions were precisely fulfilled, the depreciation reserve would represent the consumption of capital, on a cost basis, according to the method which spreads that loss over the respective service periods. But if the amounts charged to operating expenses and credited to the account for depreciation reserve are excessive, to that extent subscribers for the telephone service are required to provide, in effect, capital contributions, not to make good losses incurred by the utility in the service rendered and thus to keep its investment unimpaired, but to secure additional plant and equipment upon which the utility expects a return.'

FN11 See Mr. Justice Brandeis (dissenting) in United Railways & Electric Co. v. West, 280 U.S. 234, 259-288, 50 S.Ct. 123, 128-138, 74 L.Ed. 390, for an extended analysis of the problem.

FN12 It should be noted that the Act provides no specific rule governing depletion and depreciation. Sec. 9(a) merely states that the

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

> Commission 'may from time to time ascertain and determine, and by order fix, the proper and adequate rates of depreciation and amortization of the several classes of property of each natural-gas company used or useful in the production, transportation, or sale of natural gas.'

The Position of West Virginia. The State of West Virginia, as well as its Public Service Commission, intervened in the proceedings before the Commission and participated in the hearings before it. They have also filed a brief amicus curiae here and have participated in the argument at the bar. Their contention is that the result achieved by the rate order 'brings consequences which are unjust to West Virginia and its citizens' and which 'unfairly depress the value of gas, gas lands and gas leaseholds, unduly restrict development of their natural resources, and arbitrarily transfer their properties to the residents of other states without just compensation therefor.'

West Virginia points out that the Hope Natural Gas Co. holds a large number of leases on both producing and unoperated properties. The owner or grantor receives from the operator or grantee delay rentals as compensation for postponed drilling. When a producing well is successfully brought in, the gas lease customarily continues indefinitely for the life of the field. In that case the operator pays a stipulated gas-well rental or in some cases a gas royalty equivalent to one-eighth of the gas marketed. [FN13] Both the owner and operator have valuable property interests in the gas which are separately taxable under West Virginia law. The contention is that the reversionary interests in the leaseholds should be represented in the rate proceedings since it is their gas which is being sold in interstate ***608** commerce. It is argued, moreover, that the owners of the reversionary interests should have the benefit of the 'discovery value' of the gas leaseholds, not the interstate consumers. Furthermore, West Virginia contends that the Commission in fixing a rate for natural gas produced in that State should consider the effect of the rate order on the economy of West Virginia. It is pointed out that gas is a wasting asset with a rapidly diminishing supply. As a result West Virginia's gas deposits are becoming increasingly valuable. Nevertheless the rate fixed by the Commission reduces that value. And that reduction, it is said, has severe repercussions on the economy of the State. It is argued in the first place that as a result of this rate reduction Hope's West Virginia property taxes may be decreased in view of the relevance which earnings have under West Virginia law in the assessment of property for tax purposes. [FN14] Secondly, it is pointed out that West Virginia has a production tax [FN15] on the 'value' of the gas exported from the State. And we are told that for purposes of that tax 'value' becomes under West Virginia law 'practically the substantial equivalent of market value.' Thus West Virginia argues that undervaluation of Hope's gas leaseholds will cost the State many thousands of dollars in taxes. The effect, it is urged, is to impair West Virginia's tax structure for the benefit of Ohio and Pennsylvania consumers. West Virginia emphasizes, moreover, its deep interest in the conservation of its natural resources including its natural gas. It says that a reduction of the value of these leasehold values will jeopardize these conservation policies in three respects: (1) ****291** exploratory development of new fields will be discouraged; (2) abandonment of lowyield high-cost marginal wells will be hastened; and (3) secondary recovery of oil will be hampered. ***609** Furthermore, West Virginia contends that the reduced valuation will harm one of the great industries of the State and that harm to that industry must inevitably affect the welfare of the citizens of the State. It is also pointed out that West Virginia has a large interest in coal and oil as well as in gas and that these forms of fuel are competitive. When the price of gas is materially cheapened, consumers turn to that fuel in preference to the others. As a result this lowering of the price of natural gas will have the effect of depreciating the price of West Virginia coal and oil.

> FN13 See Simonton, The Nature of the Interest of the Grantee Under an Oil and Gas Lease (1918), 25 W.Va.L.Quar. 295.
>
> FN14 West Penn Power Co. v. Board of Review, 112 W.Va. 442, 164 S.E. 862.
>
> FN15 W.Va.Rev.Code of 1943, ch. 11. Art. 13, ss 2a, 3a.

West Virginia insists that in neglecting this aspect of the problem the Commission failed to perform the function which Congress entrusted to it and that the case should be remanded to the Commission for a modification of its order. [FN16]

> FN16 West Virginia suggests as a possible solution (1) that a 'going concern value' of the company's tangible assets be included in the rate base and (2) that the fair market value of gas delivered to customers be added to the outlay for operating expenses and taxes.

We have considered these contentions at length in view of the earnestness with which they have been urged upon us. We have searched the legislative history of the Natural

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

Gas Act for any indication that Congress entrusted to the Commission the various considerations which West Virginia has advanced here. And our conclusion is that Congress did not.

[16] [17] We pointed out in Illinois Natural Gas Co. v. Central Illinois Public Service Co., 314 U.S. 498, 506, 62 S.Ct. 384, 387, 86 L.Ed. 371, that the purpose of the Natural Gas Act was to provide, 'through the exercise of the national power over interstate commerce, an agency for regulating the wholesale distribution to public service companies of natural gas moving interstate, which this Court had declared to be interstate commerce not subject to certain types of state regulation.' As stated in the House Report the 'basic purpose' of this legislation was 'to occupy' the field in which such cases as ***610**State of Missouri v. Kansas Natural Gas Co., 265 U.S. 298, 44 S.Ct. 544, 68 L.Ed. 1027, and Public Utilities Commission v. Attleboro Steam & Electric Co., 273 U.S. 83, 47 S.Ct. 294, 71 L.Ed. 549, had held the States might not act. H.Rep. No. 709, 75th Cong., 1st Sess., p. 2. In accomplishing that purpose the bill was designed to take 'no authority from State commissions' and was 'so drawn as to complement and in no manner usurp State regulatory authority.' Id., p. 2. And the Federal Power Commission was given no authority over the 'production or gathering of natural gas.' s 1(b).

[18] The primary aim of this legislation was to protect consumers against exploitation at the lands of natural gas companies. Due to the hiatus in regulation which resulted from the Kansas Natural Gas Co. case and related decisions state commissions found it difficult or impossible to discover what it cost interstate pipe-line companies to deliver gas within the consuming states; and thus they were thwarted in local regulation. H.Rep., No. 709, supra, p. 3. Moreover, the investigations of the Federal Trade Commission had disclosed that the majority of the pipe-line mileage in the country used to transport natural gas, together with an increasing percentage of the natural gas supply for pipe-line transportation, had been acquired by a handful of holding companies. [FN17] State commissions, independent producers, and communities having or seeking the service were growing quite helpless against these combinations. [FN18] These were the types of problems with which those participating in the hearings were pre-occupied. [FN19] Congress addressed itself to those specific evils.

FN17 S.Doc. 92, Pt. 84-A, ch. XII, Final Report, Federal Trade Commission to the Senate pursuant to S.Res.No. 83, 70th Cong., 1st Sess.

FN18 S.Doc. 92, Pt. 84-A, chs. XII, XIII, op. cit., supra, note 17.

FN19 See Hearings on H.R. 11662, Subcommittee of House Committee on Interstate & Foreign Commerce, 74th Cong., 2d Sess.; Hearings on H.R. 4008, House Committee on Interstate & Foreign Commerce, 75th Cong., 1st Sess.

611** The Federal Power Commission was given*292** broad powers of regulation. The fixing of 'just and reasonable' rates (s 4) with the powers attendant thereto [FN20] was the heart of the new regulatory system. Moreover, the Commission was given certain authority by s 7(a), on a finding that the action was necessary or desirable 'in the public interest,' to require natural gas companies to extend or improve their transportation facilities and to sell gas to any authorized local distributor. By s 7(b) it was given control over the abandonment of facilities or of service. And by s 7(c), as originally enacted, no natural gas company could undertake the construction or extension of any facilities for the transportation of natural gas to a market in which natural gas was already being served by another company, or sell any natural gas in such a market, without obtaining a certificate of public convenience and necessity from the Commission. In passing on such applications for certificates of convenience and necessity the Commission was told by s 7(c), as originally enacted, that it was 'the intention of Congress that natural gas shall be sold in interstate commerce for resale for ultimate public consumption for domestic, commercial, industrial, or any other use at the lowest possible reasonable rate consistent with the maintenance of adequate service in the public interest.' The latter provision was deleted from s 7(c) when that subsection was amended by the Act of February 7, 1942, 56 Stat. 83. By that amendment limited grandfather rights were granted companies desiring to extend their facilities and services over the routes or within the area which they were already serving. Moreover, s 7(c) was broadened so as to require certificates***612** of public convenience and necessity not only where the extensions were being made to markets in which natural gas was already being sold by another company but in other situations as well.

FN20 The power to investigate and ascertain the 'actual legitimate cost' of property (s 6), the requirement as to books and records (s 8), control over rates of depreciation (s 9), the requirements for periodic and special reports (s 10), the broad powers of investigation (s 14) are among the chief powers supporting the rate making function.

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

[19] These provisions were plainly designed to protect the consumer interests against exploitation at the hands of private natural gas companies. When it comes to cases of abandonment or of extensions of facilities or service, we may assume that, apart from the express exemptions FN21 contained in s 7, considerations of conservation are material to the issuance of certificates of public convenience and necessity. But the Commission was not asked here for a certificate of public convenience and necessity under s 7 for any proposed construction or extension. It was faced with a determination of the amount which a private operator should be allowed to earn from the sale of natural gas across state lines through an established distribution system. Secs. 4 and 5, not s 7, provide the standards for that determination. We cannot find in the words of the Act or in its history the slightest intimation or suggestion that the exploitation of consumers by private operators through the maintenance of high rates should be allowed to continue provided the producing states obtain indirect benefits from it. That apparently was the Commission's view of the matter, for the same arguments advanced here were presented to the Commission and not adopted by it.

FN21 Apart from the grandfather clause contained in s 7(c), there is the provision of s 7(f) that a natural gas company may enlarge or extend its facilities with the 'service area' determined by the Commission without any further authorization.

We do not mean to suggest that Congress was unmindful of the interests of the producing states in their natural gas supplies when it drafted the Natural Gas Act. As we have said, the Act does not intrude on the domain traditionally reserved for control by state commissions; and the Federal Power Commission was given no authority over***613** 'the production or gathering of natural gas.' s 1(b). In addition, Congress recognized the legitimate interests of the States in the conservation of natural gas. By s 11 Congress instructed the Commission to make reports on compacts between two or more States dealing with the conservation, production and transportation of natural gas. FN22 The Commission was also ****293** directed to recommend further legislation appropriate or necessary to carry out any proposed compact and 'to aid in the conservation of natural-gas resources within the United States and in the orderly, equitable, and economic production, transportation, and distribution of natural gas.' s 11(a). Thus Congress was quite aware of the interests of the producing states in their natural gas supplies. FN23 But it left the protection of ***614** those interests to measures other than the maintenance of high rates to private companies. If the Commission is to be compelled to let the stockholders of natural gas companies have a feast so that the producing states may receive crumbs from that table, the present Act must be redesigned. Such a project raises questions of policy which go beyond our province.

FN22 See P.L. 117, approved July 7, 1943, 57 Stat. 383 containing an 'Interstate Compact to Conserve Oil and Gas' between Oklahoma, Texas, New Mexico, Illinois, Colorado, and Kansas.

FN23 As we have pointed out, s 7(c) was amended by the Act of February 7, 1942, 56 Stat. 83, so as to require certificates of public convenience and necessity not only where the extensions were being made to markets in which natural gas was already being sold by another company but to other situations as well. Considerations of conservation entered into the proposal to give the Act that broader scope. H.Rep.No. 1290, 77th Cong. 1st Sess., pp. 2, 3. And see Annual Report, Federal Power Commission (1940) pp. 79, 80; Baum, The Federal Power Commission and State Utility Regulation (1942), p. 261.

The bill amending s 7(c) originally contained a subsection (h) reading as follows: 'Nothing contained in this section shall be construed to affect the authority of a State within which natural gas is produced to authorize or require the construction or extension of facilities for the transportation and sale of such gas within such State: Provided, however, That the Commission, after a hearing upon complaint or upon its own motion, may by order forbid any intrastate construction or extension by any natural-gas company which it shall find will prevent such company from rendering adequate service to its customers in interstate or foreign commerce in territory already being served.' See Hearings on H.R. 5249, House Committee on Interstate & Foreign Commerce, 77th Cong., 1st Sess., pp. 7, 11, 21, 29, 32, 33. In explanation of its deletion the House Committee Report stated, pp. 4, 5: 'The increasingly important problems raised by the desire of several States to regulate the use of the natural gas produced therein in the interest of consumers within such States, as against the Federal power to regulate interstate commerce in the interest of both interstate and intrastate consumers, are deemed by the committee to warrant further intensive study and probably a more retailed and comprehensive plan for the handling thereof than that which would have been provided by the stricken subsection.'

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

[20] It is hardly necessary to add that a limitation on the net earnings of a natural gas company from its interstate business is not a limitation on the power of the producing state either to safeguard its tax revenues from that industry FN24 or to protect the interests of those who sell their gas to the interstate operator. FN25 The return which **294 the Commission*615 allowed was the net return after all such charges.

FN24 We have noted that in the annual operating expenses of some $16,000.000 the Commission included West Virginia and federal taxes. And in the net increase of $421,160 over 1940 operating expenses allowed by the Commission was some $80,000 for increased West Virginia property taxes. The adequacy of these amounts has not been challenged here.

FN25 The Commission included in the aggregate annual operating expenses which it allowed some $8,500,000 for gas purchased. It also allowed about $1,400,000 for natural gas production and about $600,000 for exploration and development.

It is suggested, however, that the Commission in ascertaining the cost of Hope's natural gas production plant proceeded contrary to s 1(b) which provides that the Act shall not apply to 'the production or gathering of natural gas'. But such valuation, like the provisions for operating expenses, is essential to the rate-making function as customarily performed in this country. Cf. Smith, The Control of Power Rates in the United States and England (1932), 159 The Annals 101. Indeed s 14(b) of the Act gives the Commission the power to 'determine the propriety and reasonableness of the inclusion in operating expenses, capital, or surplus of all delay rentals or other forms of rental or compensation for unoperated lands and leases.'

It is suggested that the Commission has failed to perform its duty under the Act in that it has not allowed a return for gas production that will be enough to induce private enterprise to perform completely and efficiently its functions for the public. The Commission, however, was not oblivious of those matters. It considered them. It allowed, for example, delay rentals and exploration and development costs in operating expenses. FN26 No serious attempt has been made here to show that they are inadequate. We certainly cannot say that they are, unless we are to substitute our opinions for the expert judgment of the administrators to whom Congress entrusted the decision. Moreover, if in light of experience they turn out to be inadequate for development of new sources of supply, the doors of the Commission are open for increased allowances. This is not an order for all time. The Act contains machinery for obtaining rate adjustments. s 4.

FN26 See note 25, supra.

[21] [22] But it is said that the Commission placed too low a rate on gas for industrial purposes as compared with gas for domestic purposes and that industrial uses should be discouraged. It should be noted in the first place that the rates which the Commission has fixed are Hope's interstate wholesale rates to distributors not interstate rates to industrial users FN27 and domestic consumers. We hardly *616 can assume, in view of the history of the Act and its provisions, that the resales intrastate by the customer companies which distribute the gas to ultimate consumers in Ohio and Pennsylvania are subject to the rate-making powers of the Commission. FN28 But in any event those rates are not in issue here. Moreover, we fail to find in the power to fix 'just and reasonable' rates the power to fix rates which will disallow or discourage resales for industrial use. The Committee Report stated that the Act provided 'for regulation along recognized and more or less standardized lines' and that there was 'nothing novel in its provisions'. H.Rep.No.709, supra, p. 3. Yet if we are now to tell the Commission to fix the rates so as to discourage particular uses, we would indeed be injecting into a rate case a 'novel' doctrine which has no express statutory sanction. The same would be true if we were to hold that the wasting-asset nature of the industry required the maintenance of the level of rates so that natural gas companies could make a greater profit on each unit of gas sold. Such theories of rate-making for this industry may or may not be desirable. The difficulty is that s 4(a) and s 5(a) contain only the conventional standards of rate-making for natural gas companies. FN29 The *617 Act of February 7, 1942, by broadening s 7 gave the Commission some additional authority to deal with the conservation aspects of the problem. FN30 But s 4(a) and s 5(a) were not changed. If the standard**295 of 'just and reasonable' is to sanction the maintenance of high rates by a natural gas company because they restrict the use of natural gas for certain purposes, the Act must be further amended.

FN27 The Commission has expressed doubts over its power to fix rates on 'direct sales to industries' from interstate pipelines as distinguished from 'sales for resale to the industrial customers of distributing companies.' Annual Report, Federal Power Commission (1940), p. 11.

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

FN28. Sec. 1(b) of the Act provides: 'The provisions of this Act shall apply to the transportation of natural gas in interstate commerce, to the sale in interstate commerce of natural gas for resale for ultimate public consumption for domestic, commercial, industrial, or any other use, and to natural-gas companies engaged in such transportation or sale, but shall not apply to any other transportation or sale of natural gas or to the local distribution of natural gas or to the facilities used for such distribution or to the production or gathering of natural gas.' And see s 2(6), defining a 'natural-gas company', and H.Rep.No. 709, supra, pp. 2, 3.

FN29 The wasting-asset characteristic of the industry was recognized prior to the Act as requiring the inclusion of a depletion allowance among operating expenses. See Columbus Gas & Fuel Co. v. Public Utilities Commission, 292 U.S. 398, 404, 405, 54 S.Ct. 763, 766, 767, 78 L.Ed. 1327, 91 A.L.R. 1403. But no such theory of rate-making for natural gas companies as is now suggested emerged from the cases arising during the earlier period of regulation.

FN30 The Commission has been alert to the problems of conservation in its administration of the Act. It has indeed suggested that it might be wise to restrict the use of natural gas 'by functions rather than by areas.' Annual Report (1940) p. 79.

The Commission stated in that connection that natural gas was particularly adapted to certain industrial uses. But it added that the general use of such gas 'under boilers for the production of steam' is 'under most circumstances of very questionable social economy.' Ibid.

[23] [24] It is finally suggested that the rates charged by Hope are discriminatory as against domestic users and in favor of industrial users. That charge is apparently based on s 4(b) of the Act which forbids natural gas companies from maintaining 'any unreasonable difference in rates, charges, service, facilities, or in any other respect, either as between localities or as between classes of service.' The power of the Commission to eliminate any such unreasonable differences or discriminations is plain. s 5(a). The Commission, however, made no findings under s 4(b). Its failure in that regard was not challenged in the petition to review. And it has not been raised or argued here by any party. Hence the problem of discrimination has no proper place in the present decision. It will be time enough to pass on that issue when it is presented to us. Congress has entrusted the administration of the Act to the Commission not to the courts. Apart from the requirements of judicial review it is not ***618** for us to advise the Commission how to discharge its functions.

Findings as to the Lawfulness of Past Rates. As we have noted, the Commission made certain findings as to the lawfulness of past rates which Hope had charged its interstate customers. Those findings were made on the complaint of the City of Cleveland and in aid of state regulation. It is conceded that under the Act the Commission has no power to make reparation orders. And its power to fix rates admittedly is limited to those 'to be thereafter observed and in force.' s 5(a). But the Commission maintains that it has the power to make findings as to the lawfulness of past rates even though it has no power to fix those rates. FN31 However that may be, we do not think that these findings were reviewable under s 19(b) of the Act. That section gives any party 'aggrieved by an order' of the Commission a review 'of such order' in the circuit court of appeals for the circuit where the natural gas company is located or has its principal place of business or in the United States Court of Appeals for the District of Columbia. We do not think that the findings in question fall within that category.

FN31 The argument is that s 4(a) makes 'unlawful' the charging of any rate that is not just and reasonable. And s 14(a) gives the Commission power to investigate any matter 'which it may find necessary or proper in order to determine whether any person has violated' any provision of the Act. Moreover, s 5(b) gives the Commission power to investigate and determine the cost of production or transportation of natural gas in cases where it has 'no authority to establish a rate governing the transportation or sale of such natural gas.' And s 17(c) directs the Commission to 'make available to the several State commissions such information and reports as may be of assistance in State regulation of natural-gas companies.' For a discussion of these points by the Commission see 44 P.U.R.,N.S., at pages 34, 35.

[25] [26] The Court recently summarized the various types of administrative action or determination reviewable as orders under the Urgent Deficiencies Act of October 22, ***619** 1913, 28 U.S.C. ss 45, 47a, 28 U.S.C.A. ss 45, 47a, and kindred statutory provisions. Rochester Tel. Corp. v. United States, 307 U.S. 125, 59 S.Ct. 754, 83 L.Ed. 1147. It was there pointed out that where 'the order sought to be reviewed does not of itself adversely affect complainant but only affects his rights adversely on the contingency of future administrative action', it is not

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

reviewable. Id., 307 U.S. at page 130, 59 S.Ct. at page 757, 83 L.Ed. 1147. The Court said, 'In view of traditional conceptions of federal judicial power, resort to the courts in these situations is either premature or wholly beyond their province.' ****296**Id., 307 U.S. at page 130, 59 S.Ct. at page 757, 83 L.Ed. 1147. And see United States v. Los Angeles & S.L.R. Co., 273 U.S. 299, 309, 310, 47 S.Ct. 413, 414, 415, 71 L.Ed. 651; Shannahan v. United States, 303 U.S. 596, 58 S.Ct. 732, 82 L.Ed. 1039. These considerations are apposite here. The Commission has no authority to enforce these findings. They are 'the exercise solely of the function of investigation.' United States v. Los Angeles & S.L.R. Co., supra, 273 U.S. at page 310, 47 S.Ct. at page 414, 71 L.Ed. 651. They are only a preliminary, interim step towards possible future action-action not by the Commission but by wholly independent agencies. The outcome of those proceedings may turn on factors other than these findings. These findings may never result in the respondent feeling the pinch of administrative action.

Reversed.

Mr. Justice ROBERTS took no part in the consideration or decision of this case.

Opinion of Mr. Justice BLACK and Mr. Justice MURPHY.

We agree with the Court's opinion and would add nothing to what has been said but for what is patently a wholly gratuitous assertion as to Constitutional law in the dissent of Mr. Justice FRANKFURTER. We refer to the statement that 'Congressional acquiescence to date in the doctrine of Chicago, etc., R. Co. v. Minnesota, supra (134 U.S. 418, 10 S.Ct. 462, 702, 33 L.Ed. 970), may fairly be claimed.' That was the case in which a majority of this Court was finally induced to expand the meaning ***620** of 'due process' so as to give courts power to block efforts of the state and national governments to regulate economic affairs. The present case does not afford a proper occasion to discuss the soundness of that doctrine because, as stated in Mr. Justice FRANKFURTER'S dissent, 'That issue is not here in controversy.' The salutary practice whereby courts do not discuss issues in the abstract applies with peculiar force to Constitutional questions. Since, however, the dissent adverts to a highly controversial due process doctrine and implies its acceptance by Congress, we feel compelled to say that we do not understand that Congress voluntarily has acquiesced in a Constitutional principle of government that courts, rather than legislative bodies, possess final authority over regulation of economic affairs. Even this Court has not always fully embraced that principle, and we wish to repeat that we have never acquiesced in it, and do not now. See Federal Power Commission v. Natural Gas Pipeline Co., 315 U.S. 575, 599-601, 62 S.Ct. 736, 749, 750, 86 L.Ed. 1037.

Mr. Justice REED, dissenting.

This case involves the problem of rate making under the Natural Gas Act. Added importance arises from the obvious fact that the principles stated are generally applicable to all federal agencies which are entrusted with the determination of rates for utilities. Because my views differ somewhat from those of my brethren, it may be of some value to set them out in a summary form.

The Congress may fix utility rates in situations subject to federal control without regard to any standard except the constitutional standards of due process and for taking private property for public use without just compensation. Wilson v. New, 243 U.S. 332, 350, 37 S.Ct. 298, 302, 61 L.Ed. 755, L.R.A.1917E, 938, Ann.Cas.1918A, 1024. A Commission, however, does not have this freedom of action. Its powers are limited not only by the constitutional standards but also by the standards of the delegation. Here the standard added by the Natural Gas Act is that the rate be 'just ***621** and reasonable.' [FN1] Section 6 [FN2] ****297** throws additional light on the meaning of these words.

FN1 Natural Gas Act, s 4(a), 52 Stat. 821, 822, 15 U.S.C. s 717c(a), 15 U.S.C.A. s 717c(a).

FN2 52 Stat. 821, 824, 15 U.S.C. s 717e, 15 U.S.C.A. s 717e:

'(a) The Commission may investigate and ascertain the actual legitimate cost of the property of every natural-gas company, the depreciation therein, and, when found necessary for rate-making purposes, other facts which bear on the determination of such cost or depreciation and the fair value of such property.

'(b) Every natural-gas company upon request shall file with the Commission an inventory of all or any part of its property and a statement of the original cost thereof, and shall keep the Commission informed regarding the cost of all additions, betterments, extensions, and new construction.'

When the phrase was used by Congress to describe allowable rates, it had relation to something ascertainable. The rates were not left to the whim of the Commission. The rates fixed would produce an annual return and that annual return was to be compared with a theoretical just and reasonable return, all risks considered, on the fair value of the property used and useful in the public service at the time of the determination.

Such an abstract test is not precise. The agency charged

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

with its determination has a wide range before it could properly be said by a court that the agency had disregarded statutory standards or had confiscated the property of the utility for public use. Cf. Chicago, M. & St. P. R. Co. v. Minnesota, 134 U.S. 418, 461-466, 10 S.Ct. 462, 702, 703-705, 33 L.Ed. 970, dissent. This is as Congress intends. Rates are left to an experienced agency particularly competent by training to appraise the amount required.

The decision as to a reasonable return had not been a source of great difficulty, for borrowers and lenders reached such agreements daily in a multitude of situations; and although the determination of fair value had been troublesome, its essentials had been worked out in fairness to investor and consumer by the time of the enactment***622** of this Act. Cf. Los Angeles G. & E. Corp. v. Railroad Comm., 289 U.S. 287, 304 et seq., 53 S.Ct. 637, 643 et seq., 77 L.Ed. 1180. The results were well known to Congress and had that body desired to depart from the traditional concepts of fair value and earnings, it would have stated its intention plainly. Helvering v. Griffiths, 318 U.S. 371, 63 S.Ct. 636.

It was already clear that when rates are in dispute, 'earnings produced by rates do not afford a standard for decision.' 289 U.S. at page 305, 53 S.Ct. at page 644, 77 L.Ed. 1180. Historical cost, prudent investment and reproduction cost [FN3] were all relevant factors in determining fair value. Indeed, disregarding the pioneer investor's risk, if prudent investment and reproduction cost were not distorted by changes in price levels or technology, each of them would produce the same result. The realization from the risk of an investment in a speculative field, such as natural gas utilities, should be reflected in the present fair value. [FN4] The amount of evidence to be admitted on any point was of course in the agency's reasonable discretion, and it was free to give its own weight to these or other factors and to determine from all the evidence its own judgment as to the necessary rates.

FN3 'Reproduction cost' has been variously defined, but for rate making purposes the most useful sense seems to be, the minimum amount necessary to create at the time of the inquiry a modern plant capable of rendering equivalent service. See I Bonbright, Valuation of Property (1937) 152. Reproduction cost as the cost of building a replica of an obsolescent plant is not of real significance.

'Prudent investment' is not defined by the Court. It may mean the sum originally put in the enterprise, either with or without additional amounts from excess earnings reinvested in the business.

FN4 It is of no more than bookkeeping significance whether the Commission allows a rate of return commensurate with the risk of the original investment or the lower rate based on current risk and a capitalization reflecting the established earning power of a successful company and the probable cost of duplicating its services. Cf. American T. & T. Co. v. United States, 299 U.S. 232, 57 S.Ct. 170, 81 L.Ed. 142. But the latter is the traditional method.

***623** I agree with the Court in not imposing a rule of prudent investment alone in determining the rate base. This leaves the Commission free, as I understand it, to use any available evidence for its finding of fair value, including both prudent investment and the cost of installing at the present time an efficient system for furnishing the needed utility service.

My disagreement with the Court arises primarily from its view that it makes no ****298** difference how the Commission reached the rate fixed so long as the result is fair and reasonable. For me the statutory command to the Commission is more explicit. Entirely aside from the constitutional problem of whether the Congress could validly delegate its rate making power to the Commission, in toto and without standards, it did legislate in the light of the relation of fair and reasonable to fair value and reasonable return. The Commission must therefore make its findings in observance of that relationship.

The Federal Power Commission did not, as I construe their action, disregard its statutory duty. They heard the evidence relating to historical and reproduction cost and to the reasonable rate of return and they appraised its weight. The evidence of reproduction cost was rejected as unpersuasive, but from the other evidence they found a rate base, which is to me a determination of fair value. On that base the earnings allowed seem fair and reasonable. So far as the Commission went in appraising the property employed in the service, I find nothing in the result which indicates confiscation, unfairness or unreasonableness. Good administration of rate making agencies under this method would avoid undue delay and render revaluations unnecessary except after violent fluctuations of price levels. Rate making under this method has been subjected to criticism. But until Congress changes the standards for the agencies, these rate making bodies should continue the conventional theory of rate ***624** making. It will probably be simpler to improve present methods than to devise new ones.

But a major error, I think was committed in the disregard

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

by the Commission of the investment in exploratory operations and other recognized capital costs. These were not considered by the Commission because they were charged to operating expenses by the company at a time when it was unregulated. Congress did not direct the Commission in rate making to deduct from the rate base capital investment which had been recovered during the unregulated period through excess earnings. In my view this part of the investment should no more have been disregarded in the rate base than any other capital investment which previously had been recovered and paid out in dividends or placed to surplus. Even if prudent investment throughout the life of the property is accepted as the formula for figuring the rate base, it seems to me illogical to throw out the admittedly prudent cost of part of the property because the earnings in the unregulated period had been sufficient to return the prudent cost to the investors over and above a reasonable return. What would the answer be under the theory of the Commission and the Court, if the only prudent investment in this utility had been the seventeen million capital charges which are now disallowed?

For the reasons heretofore stated, I should affirm the action of the Circuit Court of Appeals in returning the proceeding to the Commission for further consideration and should direct the Commission to accept the disallowed capital investment in determining the fair value for rate making purposes.

Mr. Justice FRANKFURTER, dissenting.
My brother JACKSON has analyzed with particularity the economic and social aspects of natural gas as well as ***625** the difficulties which led to the enactment of the Natural Gas Act, especially those arising out of the abortive attempts of States to regulate natural gas utilities. The Natural Gas Act of 1938 should receive application in the light of this analysis, and Mr. Justice JACKSON has, I believe, drawn relevant inferences regarding the duty of the Federal Power Commission in fixing natural gas rates. His exposition seems to me unanswered, and I shall say only a few words to emphasize my basic agreement with him.

For our society the needs that are met by public utilities are as truly public services as the traditional governmental functions of police and justice. They are not less so when these services are rendered by private enterprise under governmental regulation. Who ultimately determines the ways of regulation, is the decisive aspect in the public supervision of privately-owned utilities. Foreshadowed nearly sixty years ago, Railroad Commission Cases (Stone v. Farmers' Loan & Trust Co.), 116 U.S. 307, 331, 6 S.Ct. 334, 344, 388, 1191, 29 L.Ed. 636, it was decided more than fifty ****299** years ago that the final say under the Constitution lies with the judiciary and not the legislature. Chicago, etc., R. Co. v. Minnesota, 134 U.S. 418, 10 S.Ct. 462, 702, 33 L.Ed 970.

While legal issues touching the proper distribution of governmental powers under the Constitution may always be raised, Congressional acquiescence to date in the doctrine of Chicago, etc., R. Co. v. Minnesota, supra, may fairly be claimed. But in any event that issue is not here in controversy. As pointed out in the opinions of my brethren, Congress has given only limited authority to the Federal Power Commission and made the exercise of that authority subject to judicial review. The Commission is authorized to fix rates chargeable for natural gas. But the rates that it can fix must be 'just and reasonable'. s 5 of the Natural Gas Act, 15 U.S.C. s 717d, 15 U.S.C.A. s 717d. Instead of making the Commission's rate determinations final, Congress***626** specifically provided for court review of such orders. To be sure, 'the finding of the Commission as to the facts, if supported by substantial evidence' was made 'conclusive', s 19 of the Act, 15 U.S.C. s 717r; 15 U.S.C.A. s 717r. But obedience of the requirement of Congress that rates be 'just and reasonable' is not an issue of fact of which the Commission's own determination is conclusive. Otherwise, there would be nothing for a court to review except questions of compliance with the procedural provisions of the Natural Gas Act. Congress might have seen fit so to cast its legislation. But it has not done so. It has committed to the administration of the Federal Power Commission the duty of applying standards of fair dealing and of reasonableness relevant to the purposes expressed by the Natural Gas Act. The requirement that rates must be 'just and reasonable' means just and reasonable in relation to appropriate standards. Otherwise Congress would have directed the Commission to fix such rates as in the judgment of the Commission are just and reasonable; it would not have also provided that such determinations by the Commission are subject to court review.

To what sources then are the Commission and the courts to go for ascertaining the standards relevant to the regulation of natural gas rates? It is at this point that Mr. Justice JACKSON'S analysis seems to me pertinent. There appear to be two alternatives. Either the fixing of natural gas rates must be left to the unguided discretion of the Commission so long as the rates it fixes do not reveal a glaringly had prophecy of the ability of a regulated utility to continue its service in the future. Or the Commission's rate orders must be founded on due consideration of all the elements of the public interest which the production and distribution of natural gas involve just because it is natural gas. These elements are reflected in the Natural Gas Act, if that Act be applied as

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

an entirety. See, for *627 instance, ss 4(a)(b)(c)(d), 6, and 11, 15 U.S.C. ss 717c(a)(b)(c)(d), 717e, and 717j, 15 U.S.C.A. ss 717c(a-d), 717e, 717j. Of course the statute is not concerned with abstract theories of ratemaking. But its very foundation is the 'public interest', and the public interest is a texture of multiple strands. It includes more than contemporary investors and contemporary consumers. The needs to be served are not restricted to immediacy, and social as well as economic costs must be counted.

It will not do to say that it must all be left to the skill of experts. Expertise is a rational process and a rational process implies expressed reasons for judgment. It will little advance the public interest to substitute for the hodge-podge of the rule in Smyth v. Ames, 169 U.S. 466, 18 S.Ct. 418, 42 L.Ed. 819, an encouragement of conscious obscurity or confusion in reaching a result, on the assumption that so long as the result appears harmless its basis is irrelevant. That may be an appropriate attitude when state action is challenged as unconstitutional. Cf. Driscoll v. Edison Light & Power Co., 307 U.S. 104, 59 S.Ct. 715, 83 L.Ed. 1134. But it is not to be assumed that it was the design of Congress to make the accommodation of the conflicting interests exposed in Mr. Justice JACKSON'S opinion the occasion for a blind clash of forces or a partial assessment of relevant factors, either before the Commission or here.

The objection to the Commission's action is not that the rates it granted were too low but that the range of its vision was too narrow. And since the issues before the Commission involved no less than the **300 total public interest, the proceedings before it should not be judged by narrow conceptions of common law pleading. And so I conclude that the case should be returned to the Commission. In order to enable this Court to discharge its duty of reviewing the Commission's order, the Commission should set forth with explicitness the criteria by which it is guided *628 in determining that rates are 'just and reasonable', and it should determine the public interest that is in its keeping in the perspective of the considerations set forth by Mr. Justice JACKSON.

By Mr. Justice JACKSON.

Certainly the theory of the court below that ties rate-making to the fair-value-reproduction-cost formula should be overruled as in conflict with Federal Power Commission v. Natural Gas Pipeline Co. [FN1] But the case should, I think, be the occasion for reconsideration of our rate-making doctrine as applied to natural gas and should be returned to the Commission for further consideration in the light thereof.

FN1 315 U.S. 575, 62 S.Ct. 736, 86 L.Ed. 1037.

The Commission appears to have understood the effect of the two opinions in the Pipeline case to be at least authority and perhaps direction to fix natural gas rates by exclusive application of the 'prudent investment' rate base theory. This has no warrant in the opinion of the Chief Justice for the Court, however, which released the Commission from subservience to 'any single formula or combination of formulas' provided its order, 'viewed in its entirety, produces no arbitrary result.' 315 U.S. at page 586, 62 S.Ct. at page 743, 86 L.Ed. 1037. The minority opinion I understood to advocate the 'prudent investment' theory as a sufficient guide in a natural gas case. The view was expressed in the court below that since this opinion was not expressly controverted it must have been approved. [FN2] I disclaim this imputed*629 approval with some particularity, because I attach importance at the very beginning of federal regulation of the natural gas industry to approaching it as the performance of economic functions, not as the performance of legalistic rituals.

FN2 Judge Dobie, dissenting below, pointed out that the majority opinion in the Pipeline case 'contains no express discussion of the Prudent Investment Theory' and that the concurring opinion contained a clear one, and said, 'It is difficult for me to believe that the majority of the Supreme Court, believing otherwise, would leave such a statement unchallenged.' (134 F.2d 287, 312.) The fact that two other Justices had as matter of record in our books long opposed the reproduction cost theory of rate bases and had commented favorably on the prudent investment theory may have influenced that conclusion. See opinion of Mr. Justice Frankfurter in Driscoll v. Edison Light & Power Co., 307 U.S. 104, 122, 59 S.Ct. 715, 724, 83 L.Ed. 1134, and my brief as Solicitor General in that case. It should be noted, however, that these statements were made, not in a natural gas case, but in an electric power case-a very important distinction, as I shall try to make plain.

I.

Solutions of these cases must consider eccentricities of the industry which gives rise to them and also to the Act of Congress by which they are governed.

The heart of this problem is the elusive, exhaustible, and irreplaceable nature of natural gas itself. Given sufficient money, we can produce any desired amount of railroad, bus, or steamship transportation, or communications facilities, or capacity for generation of electric energy, or for the manufacture of gas of a kind. In the service of such utilities one customer has little concern with the amount taken by another, one's waste will not deprive another, a volume of service and be created equal to demand, and today's demands will not exhaust or lessen capacity to serve tomorrow. But the wealth of Midas and the wit of man cannot produce or reproduce a natural gas field. We cannot even reproduce the gas, for our manufactured product has only about half the heating value per unit of nature's own. [FN3]

FN3 Natural gas from the Appalachian field averages about 1050 to 1150 B.T.U. content, while by-product manufactured gas is about 530 to 540. Moody's Manual of Public Utilities (1943) 1350; Youngberg, Natural Gas (1930) 7.

****301** Natural gas in some quantity is produced in twenty-four states. It is consumed in only thirty-five states, and is ***630** available only to about 7,600,000 consumers. [FN4] Its availability has been more localized than that of any other utility service because it has depended more on the caprice of nature.

FN4 Sen.Rep. No. 1162, 75th Cong., 1st Sess., 2.

The supply of the Hope Company is drawn from that old and rich and vanishing field that flanks the Appalachian mountains. Its center of production is Pennsylvania and West Virginia, with a fringe of lesser production in New York, Ohio, Kentucky, Tennessee, and the north end of Alabama. Oil was discovered in commercial quantities at a depth of only 69 1/2 feet near Titusville, Pennsylvania, in 1859. Its value then was about $16 per barrel. [FN5] The oil branch of the petroleum industry went forward at once, and with unprecedented speed. The area productive of oil and gas was roughed out by the drilling of over 19,000 'wildcat' wells, estimated to have cost over $222,000,000. Of these, over 18,000 or 94.9 per cent, were 'dry holes.' About five per cent, or 990 wells, made discoveries of commercial importance, 767 of them resulting chiefly in oil and 223 in gas only. [FN6] Prospecting for many years was a search for oil, and to strike gas was a misfortune. Waste during this period and even later is appalling. Gas was regarded as having no commercial value until about 1882, in which year the total yield was valued only at about $75,000. [FN7] Since then, contrary to oil, which has become cheaper gas in this field has pretty steadily advanced in price.

FN5 Arnold and Kemnitzer, Petroleum in the United States and Possessions (1931) 78.

FN6. Id. at 62-63.

FN7. Id. at 61.

While for many years natural gas had been distributed on a small scale for lighting, [FN8] its acceptance was slow, ***631** facilities for its utilization were primitive, and not until 1885 did it take on the appearance of a substantial industry. [FN9] Soon monopoly of production or markets developed. [FN10] To get gas from the mountain country, where it was largely found, to centers of population, where it was in demand, required very large investment. By ownership of such facilities a few corporate systems, each including several companies, controlled access to markets. Their purchases became the dominating factor in giving a market value to gas produced by many small operators. Hope is the market for over 300 such operators. By 1928 natural gas in the Appalachian field commanded an average price of 21.1 cents per m.c.f. at points of production and was bringing 45.7 cents at points of consumption. [FN11] The companies which controlled markets, however, did not rely on gas purchases alone. They acquired and held in fee or leasehold great acreage in territory proved by 'wildcat' drilling. These large marketing system companies as well as many small independent owners and operators have carried on the commercial development of proved territory. The development risks appear from the estimate that up to 1928, 312,318 proved area wells had been sunk in the Appalachian field of which 48,962, or 15.7 per cent, failed to produce oil or gas in commercial quantity. [FN12]

FN8 At Fredonia, New York, in 1821, natural gas was conveyed from a shallow well to some thirty people. The lighthouse at Barcelona Harbor, near what is now Westfield, New York, was at about that time and for many years afterward lighted by gas that issued from a crevice. Report on Utility Corporations by Federal Trade Commission, Sen.Doc. 92, Pt. 84-A, 70th Cong., 1st Sess., 8-9.

FN9 In that year Pennsylvania enacted 'An Act to provide for the incorporation and regulation of natural gas companies.' Penn.Laws 1885, No. 32, 15 P.S. s 1981 et seq.

FN10 See Steptoe and Hoffheimer's Memorandum for Governor Cornwell of West Virginia (1917) 25 West Virginia Law Quarterly 257; see also Report on Utility Corporations by

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

Federal Trade Commission, Sen.Doc. No. 92, Pt. 84-A, 70th Cong., 1st Sess.

FN11 Arnold and Kemnitzer, Petroleum in the United States and Possessions (1931) 73.

FN12 Id. at 63.

***632** With the source of supply thus tapped to serve centers of large demand, like Pittsburgh, Buffalo, Cleveland, Youngstown, Akron, and other industrial communities, the distribution of natural gas fast became big business. Its advantages as a ****302** fuel and its price commended it, and the business yielded a handsome return. All was merry and the goose hung high for consumers and gas companies alike until about the time of the first. World War. Almost unnoticed by the consuming public, the whole Appalachian field passed its peak of production and started to decline. Pennsylvania, which to 1928 had given off about 38 per cent of the natural gas from this field, had its peak in 1905; Ohio, which had produced 14 per cent, had its peak in 1915; and West Virginia, greatest producer of all, with 45 per cent to its credit, reached its peak in 1917. [FN13]

FN13 Id. at 64.

Western New York and Eastern Ohio, on the fringe of the field, had some production but relied heavily on imports from Pennsylvania and West Virginia. Pennsylvania, a producing and exporting state, was a heavy consumer and supplemented her production with imports from West Virginia. West Virginia was a consuming state, but the lion's share of her production was exported. Thus the interest of the states in the North Appalachian supply was in conflict.

Competition among localities to share in the failing supply and the helplessness of state and local authorities in the presence of state lines and corporate complexities is a part of the background of federal intervention in the industry. [FN14] West Virginia took the boldest measure. It legislated a priority in its entire production in favor of its own inhabitants. That was frustrated by an injunction***633** from this Court. [FN15] Throughout the region clashes in the courts and conflicting decisions evidenced public anxiety and confusion. It was held that the New York Public Service Commission did not have power to classify consumers and restrict their use of gas. [FN16] That Commission held that a company could not abandon a part of its territory and still serve the rest. [FN17] Some courts admonished the companies to take action to protect consumers. [FN18] Several courts held that companies, regardless of failing supply, must continue to take on customers, but such compulsory additions were finally held to be within the Public Service Commission's discretion. [FN19] There were attempts to throw up franchises and quit the service, and municipalities resorted to the courts with conflicting results. [FN20] Public service commissions of consuming states were handicapped, for they had no control of the supply. [FN21]

FN14 See Report on Utility Corporations by Federal Trade Commission, Sen.Doc. No. 92, Pt. 84-A, 70th Cong., 1st Sess.

FN15 Commonwealth of Pennsylvania v. West Virginia, 262 U.S. 553, 43 S.Ct. 658, 67 L.Ed. 1117, 32 A.L.R. 300. For conditions there which provoked this legislation, see 25 West Virginia Law Quarterly 257.

FN16 People ex rel. Pavilion Natural Gas Co. v. Public Service Commission, 188 App.Div. 36, 176 N.Y.S. 163.

FN17 Village of Falconer v. Pennsylvania Gas Company, 17 State Department Reports, N.Y., 407.

FN18 See, for example, Public Service Commission v. Iroquois Natural Gas Co., 108 Misc. 696, 178 N.Y.S. 24; Park Abbott Realty Co. v. Iroquois Natural Gas Co., 102 Misc. 266, 168 N.Y.S. 673; Public Service Commission v. Iroquois Natural Gas Co., 189 App.Div. 545, 179 N.Y.S. 230.

FN19 People ex rel. Pennsylvania Gas Co. v. Public Service Commission, 196 App.Div. 514, 189 N.Y.S. 478.

FN20 East Ohio Gas Co. v. Akron, 81 Ohio St. 33, 90 N.E. 40, 26 L.R.A., N.S., 92, 18 Ann.Cas. 332; Village of New-comerstown v. Consolidated Gas Co., 100 Ohio St. 494, 127 N.E. 414; Gress v. Village of Ft. Laramie, 100 Ohio St. 35, 125 N.E. 112, 8 A.L.R. 242; City of Jamestown v. Pennsylvania Gas Co., D.C., 263 F. 437; Id., D.C., 264 F. 1009. See, also, United Fuel Gas Co. v. Railroad Commission, 278 U.S. 300, 308, 49 S.Ct. 150, 152, 73 L.Ed. 390.

FN21 The New York Public Service Commission said: 'While the transportation of natural gas through pipe lines from one state to another state is interstate commerce * * *, Congress has not taken over the regulation of

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

that particular industry. Indeed, it has expressly excepted it from the operation of the Interstate Commerce Commissions Law (Interstate Commerce Commissions Law, section 1). It is quite clear, therefore, that this Commission can not require a Pennsylvania corporation producing gas in Pennsylvania to transport it and deliver it in the State of New York, and that the Interstate Commerce Commission is likewise powerless. If there exists such a power, and it seems that there does, it is a power vested in Congress and by it not yet exercised. There is no available source of supply for the Crystal City Company at present except through purchasing from the Porter Gas Company. It is possible that this Commission might fix a price at which the Potter Gas Company should sell if it sold at all, but as the Commission can not require it to supply gas in the State of New York, the exercise of such a power to fix the price, if such power exists, would merely say, sell at this price or keep out of the State.' Lane v. Crystal City Gas Co., 8 New York Public Service Comm.Reports, Second District, 210, 212.

****303 *634** Shortages during World War I occasioned the first intervention in the natural gas industry by the Federal Government. Under Proclamation of President Wilson the United States Fuel Administrator took control, stopped extensions, classified consumers and established a priority for domestic over industrial use. FN22 After the war federal control was abandoned. Some cities once served with natural gas became dependent upon mixed gas of reduced heating value and relatively higher price. FN23

FN22 Proclamation by the President of September 16, 1918; Rules and Regulations of H. A. Garfield, Fuel Administrator, September 24, 1918.

FN23 For example, the Iroquois Gas Corporation which formerly served Buffalo, New York, with natural gas ranging from 1050 to 1150 b.t.u. per cu. ft., now mixes a by-product gas of between 530 and 540 b.t.u. in proportions to provide a mixed gas of about 900 b.t.u. per cu. ft. For space heating or water heating its charges range from 65 cents for the first m.c.f. per month to 55 cents for all above 25 m.c.f. per month. Moody's Manual of Public Utilities (1943) 1350.

Utilization of natural gas of highest social as well as economic return is domestic use for cooking and water ***635** heating, followed closely by use for space heating in homes. This is the true public utility aspect of the enterprise, and its preservation should be the first concern of regulation. Gas does the family cooking cheaper than any other fuel. FN24 But its advantages do not end with dollars and cents cost. It is delivered without interruption at the meter as needed and is paid for after it is used. No money is tied up in a supply, and no space is used for storage. It requires no handling, creates no dust, and leaves no ash. It responds to thermostatic control. It ignites easily and immediately develops its maximum heating capacity. These incidental advantages make domestic life more liveable.

FN24 The United States Fuel Administration made the following cooking value comparisons, based on tests made in the Department of Home Economics of Ohio State University:

Natural gas at 1.12 per M. is equivalent to coal at $6.50 per ton.

Natural gas at 2.00 per M. is equivalent to gasoline at 27¢ per gal.

Natural gas at 2.20 per M. is equivalent to electricity at 3¢ per k.w.h.

Natural gas at 2.40 per M. is equivalent to coal oil at 15¢ per gal.

Use and Conservation of Natural Gas, issued by U.S. Fuel Administration (1918) 5.

Industrial use is induced less by these qualities than by low cost in competition with other fuels. Of the gas exported from West Virginia by the Hope Company a very substantial part is used by industries. This wholesale use speeds exhaustion of supply and displaces other fuels. Coal miners and the coal industry, a large part of whose costs are wages, have complained of unfair competition from low-priced industrial gas produced with relatively little labor cost. FN25

FN25 See Brief on Behalf jof Legislation Imposing an Excise Tax on Natural Gas, submitted to N.R.A. by the United Mine Workers of America and the National Coal Association.

Gas rate structures generally have favored industrial users. In 1932, in Ohio, the average yield on gas for domestic consumption was 62.1 cents per m.c.f. and on industrial,***636** 38.7. In Pennsylvania, the figures were 62.9 against 31.7. West Virginia showed the least spread, domestic consumers paying 36.6 cents; and industrial, 27.7. FN26 Although this spread is less than ****304** in other parts of the United States, FN27 it can hardly be said to be self-justifying. It certainly is a very great factor in hastening decline of the natural gas supply.

FN26 Brief of National Gas Association and United Mine Workers, supra, note 26, pp. 35, 36, compiled from Bureau of Mines Reports.

FN27 From the source quoted in the preceding note the spread elsewhere is shown to be:

State.	Industrial	Domestic
Illinois.	29.2	1.678
Louisiana.	10.4	59.7
Oklahoma.	11.2	41.5
Texas.	13.1	59.7
Alabama.	17.8	1.227
Georgia.	22.9	1.043

About the time of World War I there were occasional and short-lived efforts by some hard-pressed companies to reverse this discrimination and adopt graduated rates, giving a low rate to quantities adequate for domestic use and graduating it upward to discourage industrial use. FN28 ***637** These rates met opposition from industrial sources, of course, and since diminished revenues from industrial sources tended to increase the domestic price, they met little popular or commission favor. The fact is that neither the gas companies nor the consumers nor local regulatory bodies can be depended upon to conserve gas. Unless federal regulation will take account of conservation, its efforts seem, as in this case, actually to constitute a new threat to the life of the Appalachian supply.

FN28 In Corning, New York, rates were initiated by the Crystal City Gas Company as follows: 70¢ for the first 5,000 cu. ft. per month; 80¢ from 5,000 to 12,000; $1 for all over 12,000. The Public Service Commission rejected these rates and fixed a flat rate of 58¢ per m.c.f. Lane v. Crystal City Gas Co., 8 New York Public Service Comm. Reports, Second District, 210.
The Pennsylvania Gas Company (National Fuel Gas Company group) also attempted a sliding scale rate for New York consumers, net per month as follows: First 5,000 feet, 35¢ ; second 5,000 feet, 45¢ ; third 5,000 feet, 50¢ ; all above 15,000, 55¢ . This was eventually abandoned, however. The company's present scale in Pennsylvania appears to be reversed to the following net monthly rate; first 3 m.c.f., 75¢ ; next 4 m.c.f., 60¢ ; next 8 m.c.f., 55¢ ; over 15 m.c.f., 50¢ . Moody's Manual of Public Utilities (1943) 1350. In New York it now serves a mixed gas.
For a study of effect of sliding scale rates in reducing consumption see 11 Proceedings of Natural Gas Association of America (1919) 287.

II.

Congress in 1938 decided upon federal regulation of the industry. It did so after an exhaustive investigation of all aspects including failing supply and competition for the use of natural gas intensified by growing scarcity. FN29 Pipelines from the Appalachian area to markets were in the control of a handful of holding company systems. FN30 This created a highly concentrated control of the producers' market and of the consumers' supplies. While holding companies dominated both production and distribution they segregated those activities in separate ***638** subsidiaries, FN31 the effect of which, if not the purpose, was to isolate ****305** some end of the business from the reach of any one state commission. The cost of natural gas to consumers moved steadily upwards over the years, out of proportion to prices of oil, which, except for the element of competition, is produced under somewhat comparable conditions. The public came to feel that the companies were exploiting the growing scarcity of local gas. The problems of this region had much to do with creating the demand for federal regulation.

FN29 See Report on Utility Corporations by Federal Trade Commission, Sen. Doc. 92, Pt. 84-A, 70th Cong., 1st Sess.

FN30 Four holding company systems control over 55 per cent of all natural gas transmission lines in the United States. They are Columbia Gas and Electric Corporation, Cities Service Co., Electric Bond and Share Co., and Standard Oil Co. of New Jersey. Columbia alone controls nearly 25 per cent, and fifteen companies account for over 80 per cent of the total. Report on Utility Corporations by Federal Trade Commission, Sen. Doc. 92, Pt. 84-A, 70th Cong., 1st Sess., 28.
In 1915, so it was reported to the Governor of West

© 2006 Thomson/West. No Claim to Orig. U.S. Govt. Works.

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

Virginia, 87 per cent of the total gas production of that state was under control of eight companies. Steptoe and Hoffheimer, Legislative Regulation of Natural Gas Supply in West Virginia, 17 West Virginia Law Quarterly 257, 260. Of these, three were subsidiaries of the Columbia system and others were subsidiaries of larger systems. In view of inter-system sales and interlocking interests it may be doubted whether there is much real competition among these companies.

FN31 This pattern with its effects on local regulatory efforts will be observed in our decisions. See United Fuel Gas Co. v. Railroad Commission, 278 U.S. 300, 49 S.Ct. 150, 73 L.Ed. 390; United Fuel Gas Co. v. Public Service Commission, 278 U.S. 322, 49 S.Ct. 157, 73 L.Ed. 402; Dayton Power & Light v. Public Utilities Commission, 292 U.S. 290, 54 S.Ct. 647, 78 L.Ed. 1267, Columbus Gas & Fuel Co. v. Public Utilities Commission, 292 U.S. 398, 54 S.Ct. 763, 78 L.Ed. 1327, 91 A.L.R. 1403, and the present case.

The Natural Gas Act declared the natural gas business to be 'affected with a public interest,' and its regulation 'necessary in the public interest.' FN32 Originally, and at the time this proceeding was commenced and tried, it also declared 'the intention of Congress that natural gas shall be sold in interstate commerce for resale for ultimate public consumption for domestic, commercial, industrial, or any other use at the lowest possible reasonable rate consistent with the maintenance of adequate service in the public interest.' FN33 While this was later dropped, there is nothing to indicate that it was not and is not still an accurate statement of purpose of the Act. Extension or improvement of facilities may be ordered when 'necessary or desirable in the public interest,' abandonment of facilities may be ordered when the supply is 'depleted to the extent that the continuance of service is unwarranted, or that the present or future public convenience or necessity ***639** permit' abandonment and certain extensions can only be made on finding of 'the present or future public convenience and necessity.' FN34 The Commission is required to take account of the ultimate use of the gas. Thus it is given power to suspend new schedules as to rates, charges, and classification of services except where the schedules are for the sale of gas 'for resale for industrial use only,' FN35 which gives the companies greater freedom to increase rates on industrial gas than on domestic gas. More particularly, the Act expressly forbids any undue preference or advantage to any person or 'any unreasonable difference in rates * * * either as between localities or as between classes of service.' FN36 And the power of the Commission expressly includes that to determine the 'just and reasonable rate, charge, classification, rule, regulation, practice, or contract to be thereafter observed and in force.' FN37

FN32 15 U.S.C. s 717(a), 15 U.S.C.A. s 717(a). (Italics supplied throughout this paragraph.)

FN33 s 7(c), 52 Stat. 825, 15 U.S.C.A. s 717f(c).

FN34 15 U.S.C. s 717f, 15 U.S.C.A. s 717f.

FN35 Id., s 717c(e).

FN36 Id., s 717c(b).

FN37 Id., s 717d(a).

In view of the Court's opinion that the Commission in administering the Act may ignore discrimination, it is interesting that in reporting this Bill both the Senate and the House Committees on Interstate Commerce pointed out that in 1934, on a nationwide average the price of natural gas per m.c.f. was 74.6 cents for domestic use, 49.6 cents for commercial use, and 16.9 for industrial use. FN38 I am not ready to think that supporters of a bill called attention to the striking fact that householders were being charged five times as much for their gas as industrial users only as a situation which the Bill would do nothing to remedy. On the other hand the Act gave to the Commission what the Court aptly describes as 'broad powers of regulation.'

FN38 Sen. Rep. No. 1162, 75th Cong., 1st Sess. 2.

***640** III.

This proceeding was initiated by the Cities of Cleveland and Akron. They alleged that the price charged by Hope for natural gas 'for resale to domestic, commercial and small industrial consumers in Cleveland and elsewhere is excessive, unjust, unreasonable, greatly in excess of the price charged by Hope to nonaffiliated companies at wholesale for resale to domestic, commercial and small industrial consumers, and greatly in excess of the price charged by Hope to East Ohio for resale to certain favored industrial consumers in Ohio, and therefore is further unduly discriminatory between consumers and between classes of service' (italics supplied). The company answered admitting differences in prices to affiliated and nonaffiliated companies and justifying them by differences in conditions of delivery.****306** As to the allegation that the contract price is 'greatly in excess of the price charged by Hope to East Ohio for resale to

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

certain favored industrial consumers in Ohio,' Hope did not deny a price differential, but alleged that industrial gas was not sold to 'favored consumers' but was sold under contract and schedules filed with and approved by the Public Utilities Commission of Ohio, and that certain conditions of delivery made it not 'unduly discriminatory.'

The record shows that in 1940 Hope delivered for industrial consumption 36,523,792 m.c.f. and for domestic and commercial consumption, 50,343,652 m.c.f. I find no separate figure for domestic consumption. It served 43,767 domestic consumers directly, 511,521 through the East Ohio Gas Company, and 154,043 through the Peoples Natural Gas Company, both affiliates owned by the same parent. Its special contracts for industrial consumption, so far as appear, are confined to about a dozen big industries.

*641 Hope is responsible for discrimination as exists in favor of these few industrial consumers. It controls both the resale price and use of industrial gas by virtue of the very interstate sales contracts over which the Commission is exercising its jurisdiction.

Hope's contract with East Ohio Company is an example. Hope agrees to deliver, and the Ohio Company to take, '(a) all natural gas requisite for the supply of the domestic consumers of the Ohio Company; (b) such amounts of natural gas as may be requisite to fulfill contracts made with the consent and approval of the Hope Company by the Ohio Company, or companies which it supplies with natural gas, for the sale of gas upon special terms and conditions for manufacturing purposes.' The Ohio company is required to read domestic customers' meters once a month and meters of industrial customers daily and to furnish all meter readings to Hope. The Hope Company is to have access to meters of all consumers and to all of the Ohio Company's accounts. The domestic consumers of the Ohio Company are to be fully supplied in preference to consumers purchasing for manufacturing purposes and 'Hope Company can be required to supply gas to be used for manufacturing purposes only where the same is sold under special contracts which have first been submitted to and approved in writing by the Hope Company and which expressly provide that natural gas will be supplied thereunder only in so far as the same is not necessary to meet the requirements of domestic consumers supplied through pipe lines of the Ohio Company.' This basic contract was supplemented from time to time, chiefly as to price. The last amendment was in a letter from Hope to East Ohio in 1937. It contained a special discount on industrial gas and a schedule of special industrial contracts, Hope reserving the right to make eliminations therefrom and agreeing that others might be added from time to *642 time with its approval in writing. It said, 'It is believed that the price concessions contained in this letter, while not based on our costs, are under certain conditions, to our mutual advantage in maintaining and building up the volumes of gas sold by us (italics supplied).' [FN39]

FN39 The list of East Ohio Gas Company's special industrial contracts thus expressly under Hope's control and their demands are as follows:

**307 The Commission took no note of the charges of discrimination and made no disposition of the issue tendered on this point. It ordered a flat reduction in the price per m.c.f. of all gas delivered by Hope in interstate commerce. It made no limitation, condition, or provision as to what classes of consumers should get the benefit of the reduction. While the cities have accepted and are defending the reduction, it is my view that the discrimination of which they have complained is perpetuated and increased by the order of the Commission and that it violates the Act in so doing.

The Commission's opinion aptly characterizes its entire objective by saying that 'bona fide investment figures now become all-important in the regulation of rates.' It should be noted that the all-importance of this theory is not the result of any instruction from Congress. When the Bill to regulate gas was first before Congress it contained*643 the following: 'In determining just and reasonable rates the Commission shall fix such rate as will allow a fair return upon the actual legitimate prudent cost of the property used and useful for the service in question.' H.R. 5423, 74th Cong., 1st Sess. Title III, s 312(c). Congress rejected this language. See H.R. 5423, s 213 (211(c)), and H.R. Rep. No. 1318, 74th Cong., 1st Sess. 30.

The Commission contends nevertheless that the 'all important' formula for finding a rate base is that of prudent investment. But it excluded from the investment base an amount actually and admittedly invested of some $17,000,000. It did so because it says that the Company recouped these expenditures from customers before the days of regulation from earnings above a fair return. But it would not apply all of such 'excess earnings' to reduce the rate base as one of the Commissioners suggested. The reason for applying excess earnings to reduce the investment base roughly from $69,000,000 to $52,000,000 but refusing to apply them to reduce it from that to some $18,000,000 is not found in a difference in the character of the earnings or in their reinvestment. The reason assigned is a difference in bookkeeping treatment many years before the Company was subject to regulation. The $17,000,000, reinvested chiefly in well

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

drilling, was treated on the books as expense. (The Commission now requires that drilling costs be carried to capital account.) The allowed rate base thus actually was determined by the Company's bookkeeping, not its investment. This attributes a significance to formal classification in account keeping that seems inconsistent with rational rate regulation. FN40 Of ***644** course, the ****308** Commission would not and should not allow a rate base to be inflated by bookkeeping which had improperly capitalized expenses. I have doubts about resting public regulation upon any rule that is to be used or not depending on which side it favors.

FN40 To make a fetish of mere accounting is to shield from examination the deeper causes, forces, movements, and conditions which should govern rates. Even as a recording of current transactions, bookkeeping is hardly an exact science. As a representation of the condition and trend of a business, it uses symbols of certainty to express values that actually are in constant flux. It may be said that in commercial or investment banking or any business extending credit success depends on knowing what not to believe in accounting. Few concerns go into bankruptcy or reorganization whose books do not show them solvent and often even profitable. If one cannot rely on accountancy accurately to disclose past or current conditions of a business, the fallacy of using it as a sole guide to future price policy ought to be apparent. However, our quest for certitude is so ardent that we pay an irrational reverence to a technique which uses symbols of certainty, even though experience again and again warns us that they are delusive. Few writers have ventured to challenge this American idolatry, but see Hamilton, Cost as a standard for Price, 4 Law and Contemporary Problems 321, 323-25. He observes that 'As the apostle would put it, accountancy is all things to all men. * * * Its purpose determines the character of a system of accounts.' He analyzes the hypothetical character of accounting and says 'It was no eternal mold for pecuniary verities handed down from on high. It was-like logic or algebra, or the device of analogy in the law-an ingenious contrivance of the human mind to serve a limited and practical purpose.' 'Accountancy is far from being a pecuniary expression of all that is industrial reality. It is an instrument, highly selective in its application, in the service of the institution of money making.' As to capital account he observes 'In an enterprise in lusty competition with others of its kind, survival is the thing and the system of accounts has its focus in solvency. * * * Accordingly depreciation, obsolescence, and other factors which carry no immediate threat are matters of lesser concern and the capital account is likely to be regarded as a secondary phenomenon. * * * But in an enterprise, such as a public utility, where continued survival seems assured, solvency is likely to be taken for granted. * * * A persistent and ingenious attention is likely to be directed not so much to securing the upkeep of the physical property as to making it certain that capitalization fails in not one whit to give full recognition to every item that should go into the account.'

***645** The Company on the other hand, has not put its gas fields into its calculations on the present-value basis, although that, it contends, is the only lawful rule for finding a rate base. To do so would result in a rate higher than it has charged or proposes as a matter of good business to charge.

The case before us demonstrates the lack of rational relationship between conventional rate-base formulas and natural gas production and the extremities to which regulating bodies are brought by the effort to rationalize them. The Commission and the Company each stands on a different theory, and neither ventures to carry its theory to logical conclusion as applied to gas fields.

IV.

This order is under judicial review not because we interpose constitutional theories between a State and the business it seeks to regulate, but because Congress put upon the federal courts a duty toward administration of a new federal regulatory Act. If we are to hold that a given rate is reasonable just because the Commission has said it was reasonable, review becomes a costly, time-consuming pageant of no practical value to anyone. If on the other hand we are to bring judgment of our own to the task, we should for the guidance of the regulators and the regulated reveal something of the philosophy, be it legal or economic or social, which guides us. We need not be slaves to a formula but unless we can point out a rational way of reaching our conclusions they can only be accepted as resting on intuition or predilection. I must admit that I possess no instinct jby which to know the 'reasonable' from the 'unreasonable' in prices and must seek some conscious design for decision.

The Court sustains this order as reasonable, but what makes it so or what could possibly make it otherwise,

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

***646** I cannot learn. It holds that: 'it is the result reached not the method employed which is controlling'; 'the fact that the method employed to reach that result may contain infirmities is not then important' and it is not 'important to this case to determine the various permissible ways in which any rate base on which the return is computed might be arrived at.' The Court does lean somewhat on considerations of capitalization and dividend history and requirements for dividends on outstanding stock. But I can give no real weight to that for it is generally and I think deservedly in discredit as any guide in rate cases. FN41

> FN41 See 2 Bonbright, Valuation of Property (1937) 1112.

Our books already contain so much talk of methods of rationalizing rates that we must appear ambiguous if we announce results without our working methods. We are confronted with regulation of a unique type of enterprise which I think requires considered rejection of much conventional utility doctrine and adoption of concepts of 'just and reasonable' rates and practices and of the 'public interest' that will take account of the peculiarities of the business.

The Court rejects the suggestions of this opinion. It says that the Committees in reporting the bill which became the Act said it provided 'for regulation along recognized and more or less standardized lines' and that there was 'nothing novel in its provisions.' So saying it sustains a rate calculated on a novel variation of a rate base theory which itself had at the time of enactment of the legislation been recognized only in dissenting opinions. Our difference seems to be between unconscious innovation, FN42 and the purposeful **309 and deliberate innovation I *647 would make to meet the necessities of regulating the industry before us.

> FN42 Bonbright says, '* * * the vice of traditional law lies, not in its adoption of excessively rigid concepts of value and rules of valuation, but rather in its tendency to permit shifts in meaning that are inept, or else that are ill-defined because the judges that make them will not openly admit that they are doing so.' Id., 1170.

Hope's business has two components of quite divergent character. One, while not a conventional common-carrier undertaking, is essentially a transportation enterprise consisting of conveying gas from where it is produced to point of delivery to the buyer. This is a relatively routine operation not differing substantially from many other utility operations. The service is produced by an investment in compression and transmission facilities. Its risks are those of investing in a tested means of conveying a discovered supply of gas to a known market. A rate base calculated on the prudent investment formula would seem a reasonably satisfactory measure for fixing a return from that branch of the business whose service is roughly proportionate to the capital invested. But it has other consequences which must not be overlooked. It gives marketability and hence 'value' to gas owned by the company and gives the pipeline company a large power over the marketability and hence 'value' of the production of others.

The other part of the business-to reduce to possession an adequate supply of natural gas-is of opposite character, being more erratic and irregular and unpredictable in relation to investment than any phase of any other utility business. A thousand feet of gas captured and severed from real estate for delivery to consumers is recognized under our law as property of much the same nature as a ton of coal, a barrel of oil, or a yard of sand. The value to be allowed for it is the real battleground between the investor and consumer. It is from this part of the business that the chief difference between the parties as to a proper rate base arises.

It is necessary to a 'reasonable' price for gas that it be anchored to a rate base of any kind? Why did courts in the first place begin valuing 'rate bases' in order to 'value' something else? The method came into vogue ***648** in fixing rates for transportation service which the public obtained from common carriers. The public received none of the carriers' physical property but did make some use of it. The carriage was often a monopoly so there were no open market criteria as to reasonableness. The 'value' or 'cost' of what was put to use in the service by the carrier was not a remote or irrelevant consideration in making such rates. Moreover the difficulty of appraising an intangible service was thought to be simplified if it could be related to physical property which was visible and measurable and the items of which might have market value. The court hoped to reason from the known to the unknown. But gas fields turn this method topsy turvy. Gas itself is tangible, possessible, and does have a market and a price in the field. The value of the rate base is more elusive than that of gas. It consists of intangibles-leaseholds and freeholds-operated and unoperated-of little use in themselves except as rights to reach and capture gas. Their value lies almost wholly in predictions of discovery, and of price of gas when captured, and bears little relation to cost of tools and supplies and labor to develop it. Gas is what Hope sells and it can be directly priced more reasonably and easily and accurately than the components of a rate base can be valued. Hence the reason for resort to a roundabout way of rate base price fixing does not exist in the case of gas in the field.

But if found, and by whatever method found, a rate base is little help in determining reasonableness of the price of gas. Appraisal of present value of these intangible rights to pursue fugitive gas depends on the value assigned to the gas when captured. The 'present fair value' rate base, generally in ill repute, [FN43] is not even **310 urged by the gas company for valuing its fields.

> FN43 'The attempt to regulate rates by reference to a periodic or occasional reappraisal of the properties has now been tested long enough to confirm the worst fears of its critics. Unless its place is taken by some more promising scheme of rate control, the days of private ownership under government regulation may be numbered.' 2 Bonbright, Valuation of Property (1937) 1190.

***649** The prudent investment theory has relative merits in fixing rates for a utility which creates its service merely by its investment. The amount and quality of service rendered by the usual utility will, at least roughly, be measured by the amount of capital it puts into the enterprise. But it has no rational application where there is no such relationship between investment and capacity to serve. There is no such relationship between investment and amount of gas produced. Let us assume that Doe and Roe each produces in West Virginia for delivery to Cleveland the same quantity of natural gas per day. Doe, however, through luck or foresight or whatever it takes, gets his gas from investing $50,000 in leases and drilling. Roe drilled poorer territory, got smaller wells, and has invested $250,000. Does anybody imagine that Roe can get or ought to get for his gas five times as much as Doe because he has spent five times as much? The service one renders to society in the gas business is measured by what he gets out of the ground, not by what he puts into it, and there is little more relation between the investment and the results than in a game of poker.

Two-thirds of the gas Hope handles it buys from about 340 independent producers. It is obvious that the principle of rate-making applied to Hope's own gas cannot be applied, and has not been applied, to the bulk of the gas Hope delivers. It is not probable that the investment of any two of these producers will bear the same ratio to their investments. The gas, however, all goes to the same use, has the same utilization value and the same ultimate price.

To regulate such an enterprise by undiscriminatingly transplanting any body of rate doctrine conceived and ***650** adapted to the ordinary utility business can serve the 'public interest' as the Natural Gas Act requires, if at all, only by accident. Mr. Justice Brandeis, the pioneer juristic advocate of the prudent investment theory for man-made utilities, never, so far as I am able to discover, proposed its application to a natural gas case. On the other hand, dissenting in Commonwealth of Pennsylvania v. West Virginia, he reviewed the problems of gas supply and said, 'In no other field of public service regulation is the controlling body confronted with factors so baffling as in the natural gas industry, and in none is continuous supervision and control required in so high a degree.' 262 U.S. 553, 621, 43 S.Ct. 658, 674, 67 L.Ed. 1117, 32 A.L.R. 300. If natural gas rates are intelligently to be regulated we must fit our legal principles to the economy of the industry and not try to fit the industry to our books.

As our decisions stand the Commission was justified in believing that it was required to proceed by the rate base method even as to gas in the field. For this reason the Court may not merely wash its hands of the method and rationale of rate making. The fact is that this Court, with no discussion of its fitness, simply transferred the rate base method to the natural gas industry. It happened in Newark Natural Gas & Fuel Co. v. City of Newark, Ohio, 1917, 242 U.S. 405, 37 S.Ct. 156, 157, 61 L.Ed. 393, Ann.Cas.1917B, 1025, in which the company wanted 25 cents per m.c.f., and under the Fourteenth Amendment challenged the reduction to 18 cents by ordinance. This Court sustained the reduction because the court below 'gave careful consideration to the questions of the value of the property * * * at the time of the inquiry,' and whether the rate 'would be sufficient to provide a fair return on the value of the property.' The Court said this method was 'based upon principles thoroughly established by repeated secisions of this court,' citing many cases, not one of which involved natural gas or a comparable wasting natural resource. Then came issues as to state power to ***651** regulate as affected by the commerce clause. Public Utilities Commission v. Landon, 1919, 249 U.S. 236, 39 S.Ct. 268, 63 L.Ed. 577; Pennsylvania Gas Co. v. Public Service Commission, 1920, 252 U.S. 23, 40 S.Ct. 279, 64 L.Ed. 434. These questions settled, the Court again was called upon in natural gas cases to consider state rate-making claimed to be invalid under the Fourteenth Amendment. United Fuel Gas Co. v. Railroad Commission of Kentucky, 1929, 278 U.S. 300, 49 S.Ct. 150, 73 L.Ed. 390; United Fuel Gas Company v. Public Service Commission of West Virginia, 1929, 278 U.S. 322, 49 S.Ct. 157, 73 L.Ed. 402. Then, as now, the differences were 'due **311 chiefly to the difference in value ascribed by each to the gas rights and leaseholds.' 278 U.S. 300, 311, 49 S.Ct. 150, 153, 73 L.Ed. 390. No one seems to have questioned that the rate

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

base method must be pursued and the controversy was at what rate base must be used. Later the 'value' of gas in the field was questioned in determining the amount a regulated company should be allowed to pay an affiliate therefor-a state determination also reviewed under the Fourteenth Amendment. Dayton Power & Light Co. v. Public Utilities Commission of Ohio, 1934, 292 U.S. 290, 54 S.Ct. 647, 78 L.Ed. 1267, Columbus Gas & Fuel Co. v. Public Utilities Commission of Ohio, 1934, 292 U.S. 398, 54 S.Ct. 763, 78 L.Ed. 1327, 91 A.L.R. 1403. In both cases, one of which sustained, and one of which struck down a fixed rate the Court assumed the rate base method, as the legal way of testing reasonableness of natural gas prices fixed by public authority, without examining its real relevancy to the inquiry.

Under the weight of such precedents we cannot expect the Commission to initiate economically intelligent methods of fixing gas prices. But the Court now faces a new plan of federal regulation based on the power to fix the price at which gas shall be allowed to move in interstate commerce. I should now consider whether these rules devised under the Fourteenth Amendment are the exclusive tests of a just and reasonable rate under the federal statute, inviting reargument directed to that point ***652** if necessary. As I see it now I would be prepared to hold that these rules do not apply to a natural gas case arising under the Natural Gas Act.

Such a holding would leave the Commission to fix the price of gas in the field as one would fix maximum prices of oil or milk or coal, or any other commodity. Such a price is not calculated to produce a fair return on the synthetic value of a rate base of any individual producer, and would not undertake to assure a fair return to any producer. The emphasis would shift from the producer to the product, which would be regulated with an eye to average or typical producing conditions in the field.

Such a price fixing process on economic lines would offer little temptation to the judiciary to become back seat drivers of the price fixing machine. The unfortunate effect of judicial intervention in this field is to divert the attention of those engaged in the process from what is economically wise to what is legally permissible. It is probable that price reductions would reach economically unwise and self-defeating limits before they would reach constitutional ones. Any constitutional problems growing out of price fixing are quite different than those that have heretofore been considered to inhere in rate making. A producer would have difficulty showing the invalidity of such a fixed price so long as he voluntarily continued to sell his product in interstate commerce. Should he withdraw and other authority be invoked to compel him to part with his property, a different problem would be presented.

Allowance in a rate to compensate for gas removed from gas lands, whether fixed as of point of production or as of point of delivery, probably best can be measured by a functional test applied to the whole industry. For good or ill we depend upon private enterprise to exploit these natural resources for public consumption. The function which an allowance for gas in the field should perform ***653** for society in such circumstances is to be enough and no more than enough to induce private enterprise completely and efficiently to utilize gas resources, to acquire for public service any available gas or gas rights and to deliver gas at a rate and for uses which will be in the future as well as in the present public interest.

The Court fears that 'if we are now to tell the Commission to fix the rates so as to discourage particular uses, we would indeed be injecting into a rate case a 'novel' doctrine * * *.' With due deference I suggest that there is nothing novel in the idea that any change in price of a service or commodity reacts to encourage or discourage its use. The question is not whether such consequences will or will not follow; the question is whether effects must be suffered blindly or may be intelligently selected, whether price control shall have targets at which it deliberately aims or shall be handled like a gun in the hands of one who does not know it is loaded.

We should recognize 'price' for what it is-a tool, a means, an expedient. In public****312** hands it has much the same economic effects as in private hands. Hope knew that a concession in industrial price would tend to build up its volume of sales. It used price as an expedient to that end. The Commission makes another cut in that same price but the Court thinks we should ignore the effect that it will have on exhaustion of supply. The fact is that in natural gas regulation price must be used to reconcile the private property right society has permitted to vest in an important natural resource with the claims of society upon it-price must draw a balance between wealth and welfare.

To carry this into techniques of inquiry is the task of the Commissioner rather than of the judge, and it certainly is no task to be solved by mere bookkeeping but requires the best economic talent available. There would doubtless be inquiry into the price gas is bringing in the ***654** field, how far that price is established by arms' length bargaining and how far it may be influenced by agreements in restraint of trade or monopolistic influences. What must Hope really pay to get and to replace gas it delivers under this order? If it should get more or less than that for its own, how much and why? How far are such prices influenced by pipe line access to

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

markets and if the consumers pay returns on the pipe lines how far should the increment they cause go to gas producers? East Ohio is itself a producer in Ohio. [FN44] What do Ohio authorities require Ohio consumers to pay for gas in the field? Perhaps these are reasons why the Federal Government should put West Virginia gas at lower or at higher rates. If so what are they? Should East Ohio be required to exploit its half million acres of unoperated reserve in Ohio before West Virginia resources shall be supplied on a devalued basis of which that State complains and for which she threatens measures of self keep? What is gas worth in terms of other fuels it displaces?

FN44 East Ohio itself owns natural gas rights in 550,600 acres, 518,526 of which are reserved and 32,074 operated, by 375 wells. Moody's Manual of Public Utilities (1943) 5.

A price cannot be fixed without considering its effect on the production of gas. Is it an incentive to continue to exploit vast unoperated reserves? Is it conducive to deep drilling tests the result of which we may know only after trial? Will it induce bringing gas from afar to supplement or even to substitute for Appalachian gas? [FN45] Can it be had from distant fields as cheap or cheaper? If so, that competitive potentiality is certainly a relevant consideration. Wise regulation must also consider, as a private buyer would, what alternatives the producer has ***655** if the price is not acceptable. Hope has intrastate business and domestic and industrial customers. What can it do by way of diverting its supply to intrastate sales? What can it do by way of disposing of its operated or reserve acreage to industrial concerns or other buyers? What can West Virginia do by way of conservation laws, severance or other taxation, if the regulated rate offends? It must be borne in mind that while West Virginia was prohibited from giving her own inhabitants a priority that discriminated against interstate commerce, we have never yet held that a good faith conservation act, applicable to her own, as well as to others, is not valid. In considering alternatives, it must be noted that federal regulation is very incomplete, expressly excluding regulation of 'production or gathering of natural gas,' and that the only present way to get the gas seems to be to call it forth by price inducements. It is plain that there is a downward economic limit on a safe and wise price.

FN45 Hope has asked a certificate of convenience and necessity to lay 1140 miles of 22-inch pipeline from Hugoton gas fields in southwest Kansas to West Virginia to carry 285 million cu. ft. of natural gas per day. The cost was estimated at $51,000,000. Moody's Manual of Public Utilities (1943) 1760.

But there is nothing in the law which compels a commission to fix a price at that 'value' which a company might give to its product by taking advantage of scarcity, or monopoly of supply. The very purpose of fixing maximum prices is to take away from the seller his opportunity to get all that otherwise the market would award him for his goods. This is a constitutional use of the power to fix maximum prices, ****313**Block v. Hirsh, 256 U.S. 135, 41 S.Ct. 458, 65 L.Ed. 865, 16 A.L.R. 165, Marcus Brown Holding Co. v. Feldman, 256 U.S. 170, 41 S.Ct. 465, 65 L.Ed. 877, International Harvester Co. v. Kentucky, 234 U.S. 216, 34 S.Ct. 853, 58 L.Ed. 1284; Highland v. Russell Car & Snow Plow Co., 279 U.S. 253, 49 S.Ct. 314, 73 L.Ed. 688, just as the fixing of minimum prices of goods in interstate commerce is constitutional although it takes away from the buyer the advantage in bargaining which market conditions would give him. United States v. Darby, 312 U.S. 100, 657, 61 S.Ct. 451, 85 L.Ed. 609, 132 A.L.R. 1430; Mulford v. Smith, 307 U.S. 38, 59 S.Ct. 648, 83 L.Ed. 1092, United States v. Rock Royal Co-operative, Inc., 307 U.S. 533, 59 S.Ct. 993, 83 L.Ed. 1446, Sunshine Anthracite Coal Co. v. Adkins, 310 U.S. 381, 60 S.Ct. 907, 84 L.Ed. 1263. The Commission has power to fix ***656** a price that will be both maximum and minimum and it has the incidental right, and I think the duty, to choose the economic consequences it will promote or retard in production and also more importantly in consumption, to which I now turn.

If we assume that the reduction in company revenues is warranted we then come to the question of translating the allowed return into rates for consumers or classes of consumers. Here the Commission fixed a single rate for all gas delivered irrespective of its use despite the fact that Hope has established what amounts to two rates-a high one for domestic use and a lower one for industrial contracts. [FN46] The Commission can fix two prices for interstate gas as readily as one-a price for resale to domestic users and another for resale to industrial users. This is the pattern Hope itself has established in the very contracts over which the Commission is expressly given jurisdiction. Certainly the Act is broad enough to permit two prices to be fixed instead of one, if the concept of the 'public interest' is not unduly narrowed.

FN46 I find little information as to the rates for industries in the record and none at all in such usual sources as Moody's Manual.

The Commission's concept of the public interest in natural

(Cite as: 51 P.U.R.(NS) 193, 64 S.Ct. 281)

gas cases which is carried today into the Court's opinion was first announced in the opinion of the minority in the Pipeline case. It enumerated only two 'phases of the public interest: (1) the investor interest; (2) the consumer interest,' which it emphasized to the exclusion of all others. 315 U.S. 575, 606, 62 S.Ct. 736, 753, 86 L.Ed. 1037. This will do well enough in dealing with railroads or utilities supplying manufactured gas, electric, power, a communications service or transportation, where utilization of facilities does not impair their future usefulness. Limitation of supply, however, brings into a natural gas case another phase of the public interest that to my mind overrides both the owner *657 and the consumer of that interest. Both producers and industrial consumers have served their immediate private interests at the expense of the long-range public interest. The public interest, of course, requires stopping unjust enrichment of the owner. But it also requires stopping unjust impoverishment of future generations. The public interest in the use by Hope's half million domestic consumers is quite a different one from the public interest in use by a baker's dozen of industries.

Prudent price fixing it seems to me must at the very threshold determine whether any part of an allowed return shall be permitted to be realized from sales of gas for resale for industrial use. Such use does tend to level out daily and seasonal peaks of domestic demand and to some extent permits a lower charge for domestic service. But is that a wise way of making gas cheaper when, in comparison with any substitute, gas is already a cheap fuel? The interstate sales contracts provide that at times when demand is so great that there is not enough gas to go around domestic users shall first be served. Should the operation of this preference await the day of actual shortage? Since the propriety of a preference seems conceded, should it not operate to prevent the coming of a shortage as well as to mitigate its effects? Should industrial use jeopardize tomorrow's service to householders any more than today's? If, however, it is decided to cheapen domestic use by resort to industrial sales, should they be limited to the few uses **314 for which gas has special values or extend also to those who use it only because it is cheaper than competitive fuels? FN47 And how much cheaper should industrial*658 gas sell than domestic gas, and how much advantage should it have over competitive fuels? If industrial gas is to contribute at all to lowering domestic rates, should it not be made to contribute the very maximum of which it is capable, that is, should not its price be the highest at which the desired volume of sales can be realized?

FN47 The Federal Power Commission has touched upon the problem of conservation in connection with an application for a certificate permitting construction of a 1500-mile pipeline from southern Texas to New York City and says: 'The Natural Gas Act as presently drafted does not enable the Commission to treat fully the serious implications of such a problem. The question should be raised as to whether the proposed use of natural gas would not result in displacing a less valuable fuel and create hardships in the industry already supplying the market, while at the same time rapidly depleting the country's natural-gas reserves. Although, for a period of perhaps 20 years, the natural gas could be so priced as to appear to offer an apparent saving in fuel costs, this would mean simply that social costs which must eventually be paid had been ignored.

'Careful study of the entire problem may lead to the conclusion that use of natural gas should be restricted by functions rather than by areas. Thus, it is especially adapted to space and water heating in urban homes and other buildings and to the various industrial heat processes which require concentration of heat, flexibility of control, and uniformity of results. Industrial uses to which it appears particularly adapted include the treating and annealing of metals, the operation of kilns in the ceramic, cement, and lime industries, the manufacture of glass in its various forms, and use as a raw material in the chemical industry. General use of natural gas under boilers for the production of steam is, however, under most circumstances of very questionable social economy.' Twentieth Annual Report of the Federal Power Commission (1940) 79.

If I were to answer I should say that the household rate should be the lowest that can be fixed under commercial conditions that will conserve the supply for that use. The lowest probable rate for that purpose is not likely to speed exhaustion much, for it still will be high enough to induce economy, and use for that purpose has more nearly reached the saturation point. On the other hand the demand for industrial gas at present rates already appears to be increasing. To lower further the industrial rate is merely further to subsidize industrial consumption and speed depletion. The impact of the flat reduction *659 of rates ordered here admittedly will be to increase the industrial advantages of gas over competing fuels and to increase its use. I think this is not, and there is no finding by the Commission that it is, in the public interest.

There is no justification in this record for the present discrimination against domestic users of gas in favor of industrial users. It is one of the evils against which the Natural Gas Act was aimed by Congress and one of the evils complained of here by Cleveland and Akron. If

Hope's revenues should be cut by some $3,600,000 the whole reduction is owing to domestic users. If it be considered wise to raise part of Hope's revenues by industrial purpose sales, the utmost possible revenue should be raised from the least consumption of gas. If competitive relationships to other fuels will permit, the industrial price should be substantially advanced, not for the benefit of the Company, but the increased revenues from the advance should be applied to reduce domestic rates. For in my opinion the 'public interest' requires that the great volume of gas now being put to uneconomic industrial use should either be saved for its more important future domestic use or the present domestic user should have the full benefit of its exchange value in reducing his present rates.

Of course the Commission's power directly to regulate does not extend to the fixing of rates at which the local company shall sell to consumers. Nor is such power required to accomplish the purpose. As already pointed out, the very contract the Commission is altering classifies the gas according to the purposes for which it is to be resold and provides differentials between the two classifications. It would only be necessary for the Commission to order ****315** that all gas supplied under paragraph (a) of Hope's contract with the East Ohio Company shall be ***660** at a stated price fixed to give to domestic service the entire reduction herein and any further reductions that may prove possible by increasing industrial rates. It might further provide that gas delivered under paragraph (b) of the contract for industrial purposes to those industrial customers Hope has approved in writing shall be at such other figure as might be found consistent with the public interest as herein defined. It is too late in the day to contend that the authority of a regulatory commission does not extend to a consideration of public interests which it may not directly regulate and a conditioning of its orders for their protection. Interstate Commerce Commission v. Railway Labor Executives Ass'n, 315 U.S. 373, 62 S.Ct. 717, 86 L.Ed. 904; United States v. Lowden, 308 U.S. 225, 60 S.Ct. 248, 84 L.Ed. 208.

Whether the Commission will assert its apparently broad statutory authorization over prices and discriminations is, of course, its own affair, not ours. It is entitled to its own notion of the 'public interest' and its judgment of policy must prevail. However, where there is ground for thinking that views of this Court may have constrained the Commission to accept the rate-base method of decision and a particular single formula as 'all important' for a rate base, it is appropriate to make clear the reasons why I, at least, would not be so understood. The Commission is free to face up realistically to the nature and peculiarity of the resources in its control, to foster their duration in fixing price, and to consider future interests in addition to those of investors and present consumers. If we return this case it may accept or decline the proffered freedom. This problem presents the Commission an unprecedented opportunity if it will boldly make sound economic considerations, instead of legal and accounting theories, the foundation of federal policy. I would return the case to the Commission and thereby be clearly quit of what now may appear to be some responsibility for perpetrating a shortsighted pattern of natural gas regulation.

U.S. 1944.
Federal Power Commission v. Hope Natural Gas Co.
51 P.U.R.(NS) 193, 320 U.S. 591, 64 S.Ct. 281, 88 L.Ed. 333

END OF DOCUMENT

© 2006 Thomson/West. No Claim to Orig. U.S. Govt. Works.

Supreme Court of the United States
BLUEFIELD WATERWORKS & IMPROVEMENT CO.
v.
PUBLIC SERVICE COMMISSION OF WEST VIRGINIA et al.
No. 256.

Argued January 22, 1923.
Decided June 11, 1923.

In Error to the Supreme Court of Appeals of West Virginia.

Proceedings by the Bluefield Waterworks & Improvement Company against the Public Service Commission of the State of West Virginia and others to suspend and set aside an order of the Commission fixing rates. From a judgment of the Supreme Court of West Virginia, dismissing the petition, and denying the relief (89 W. Va. 736, 110 S. E. 205), the Waterworks Company bring error. Reversed.

West Headnotes

Constitutional Law 92 298(1.5)

92 Constitutional Law
92XII Due Process of Law
92k298 Regulation of Charges and Prices
92k298(1.5) k. Public Utilities in General. Most Cited Cases
Rates which are not sufficient to yield a reasonable return on the value of the property used in public service at the time it is being so used to render the service are unjust, unreasonable, and confiscatory, and their enforcement deprives the public utility company of its property, in violation of the Fourteenth Amendment of the Constitution.

Constitutional Law 92 298(3)

92 Constitutional Law
92XII Due Process of Law
92k298 Regulation of Charges and Prices
92k298(3) k. Water and Irrigation Companies. Most Cited Cases
Under the due process clause of the Fourteenth Amendment of the Constitution, U.S.C.A., a waterworks company is entitled to the independent judgment of the court as to both law and facts, where the question is whether the rates fixed by a public service commission are confiscatory.

Waters and Water Courses 405 203(10)

405 Waters and Water Courses
405IX Public Water Supply
405IX(A) Domestic and Municipal Purposes
405k203 Water Rents and Other Charges
405k203(10) k. Reasonableness of Charges. Most Cited Cases
It was error for a state public service commission, in arriving at the value of the property used in public service, for the purpose of fixing the rates, to fail to give proper weight to the greatly increased cost of construction since the war.

Waters and Water Courses 405 203(10)

405 Waters and Water Courses
405IX Public Water Supply
405IX(A) Domestic and Municipal Purposes
405k203 Water Rents and Other Charges
405k203(10) k. Reasonableness of Charges. Most Cited Cases
A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding risks and uncertainties, but it has no constitutional right to such profits as are realized or anticipated in highly profitable enterprises or speculative ventures.

Waters and Water Courses 405 203(10)

405 Waters and Water Courses
405IX Public Water Supply
405IX(A) Domestic and Municipal Purposes
405k203 Water Rents and Other Charges
405k203(10) k. Reasonableness

(Cite as: P.U.R. 1923D 11, 43 S.Ct. 675)

of Charges. Most Cited Cases
Since the investors take into account the result of past operations as well as present rates in determining whether they will invest, a waterworks company which had been earning a low rate of returns through a long period up to the time of the inquiry is entitled to return of more than 6 per cent. on the value of its property used in the public service, in order to justly compensate it for the use of its property.

Federal Courts 170B 504.1

170B Federal Courts
170BVII Supreme Court
170BVII(E) Review of Decisions of State Courts
170Bk504 Nature of Decisions or Questions Involved
170Bk504.1 k. In General. Most Cited Cases
(Formerly 106k394(6))
A proceeding in a state court attacking an order of a public service commission fixing rates, on the ground that the rates were confiscatory and the order void under the federal Constitution, is one where there is drawn in question the validity of authority exercised under the state, on the ground of repugnancy to the federal Constitution, and therefore is reviewable by writ of error.

****675 *680** Messrs. Alfred G. Fox and Jos. M. Sanders, both of Bluefield, W. Va., for plaintiff in error.
Mr. Russell S. Ritz, of Bluefield, W. Va., for defendants in error.

***683** Mr. Justice BUTLER delivered the opinion of the Court.
Plaintiff in error is a corporation furnishing water to the city of Bluefield, W. Va., ****676** and its inhabitants. September 27, 1920, the Public Service Commission of the state, being authorized by statute to fix just and reasonable rates, made its order prescribing rates. In accordance with the laws of the state (section 16, c. 15-O, Code of West Virginia [sec. 651]), the company instituted proceedings in the Supreme Court of Appeals to suspend and set aside the order. The petition alleges that the order is repugnant to the Fourteenth Amendment, and deprives the company of its property without just compensation and without due process of law, and denies it equal protection of the laws. A final judgment was entered, denying the company relief and dismissing its petition. The case is here on writ of error.

[1] 1. The city moves to dismiss the writ of error for the reason, as it asserts, that there was not drawn in question the validity of a statute or an authority exercised under the state, on the ground of repugnancy to the federal Constitution.

The validity of the order prescribing the rates was directly challenged on constitutional grounds, and it was held valid by the highest court of the state. The prescribing of rates is a legislative act. The commission is an instrumentality of the state, exercising delegated powers. Its order is of the same force as would be a like enactment by the Legislature. If, as alleged, the prescribed rates are confiscatory, the order is void. Plaintiff in error is entitled to bring the case here on writ of error and to have that question decided by this court. The motion to dismiss will be denied. See ***684**Oklahoma Natural Gas Co. v. Russell, 261 U. S. 290, 43 Sup. Ct. 353, 67 L. Ed 659, decided March 5, 1923, and cases cited; also Ohio Valley Co. v. Ben Avon Borough, 253 U. S. 287, 40 Sup Ct. 527, 64 L. Ed. 908.

2. The commission fixed $460,000 as the amount on which the company is entitled to a return. It found that under existing rates, assuming some increase of business, gross earnings for 1921 would be $80,000 and operating expenses $53,000 leaving $27,000, the equivalent of 5.87 per cent., or 3.87 per cent. after deducting 2 per cent. allowed for depreciation. It held existing rates insufficient to the extent of 10,000. Its order allowed the company to add 16 per cent. to all bills, excepting those for public and private fire protection. The total of the bills so to be increased amounted to $64,000; that is, 80 per cent. of the revenue was authorized to be increased 16 per cent., equal to an increase of 12.8 per cent. on the total, amounting to $10,240.

As to value: The company claims that the value of the property is greatly in excess of $460,000. Reference to the evidence is necessary. There was submitted to the commission evidence of value which it summarized substantially as follows:

a. Estimate by company's engineer

(Cite as: P.U.R. 1923D 11, 43 S.Ct. 675)

	on. basis of reproduction new, less. depreciation, at prewar prices.	$ 624,548 00
b.	Estimate by company's engineer on. basis of reproduction new, less. depreciation, at 1920 prices.	1,194,663 00
c.	Testimony of company's engineer. fixing present fair value for rate. making purposes.	900,000 00
d.	Estimate by commissioner's engineer on. basis of reproduction new, less. depreciation at 1915 prices, plus. additions since December 31, 1915, at. actual cost, excluding Bluefield. Valley waterworks, water rights,. and going value.	397,964 38
e.	Report of commission's statistician. showing investment cost less. depreciation.	365,445 13
f.	Commission's valuation, as fixed in. case No. 368 ($360,000), plus gross. additions to capital since made. ($92,520.53).	452,520 53

***685** It was shown that the prices prevailing in 1920 were nearly double those in 1915 and pre-war time. The company did not claim value as high as its estimate of cost of construction in 1920. Its valuation engineer testified that in his opinion the value of the property was $900,000-a figure between the cost of construction in 1920, less depreciation, and the cost of construction in 1915 and before the war, less depreciation.

The commission's application of the evidence may be stated briefly as follows:

As to 'a,' supra: The commission deducted $204,000 from the estimate (details printed in the margin), FN1 leaving approximately $421,000, which it contrasted with the estimate of its own engineer, $397,964.38 (see 'd,' supra). It found that there should be included $25,000 for the Bluefield Valley waterworks plant in Virginia, 10 per cent. for going value, and $10,000 for working capital. If these be added to $421,000, there results $500,600. This may be compared with the commission's final figure, $460,000.

FN1

Difference in depreciation allowed.	$ 49,000
Preliminary organization and development. cost.	14,500
Bluefield Valley waterworks plant.	25,000
Water rights.	50,000
Excess overhead costs.	39,000
Paving over mains.	28,500
	$204,000

(Cite as: P.U.R. 1923D 11, 43 S.Ct. 675)

***686** As to 'b' and 'c,' supra: These were given no weight by the commission in arriving at its final figure, $460,000. It said:

'Applicant's plant was originally constructed more than twenty years ago, and has been added to from time to time as the progress and development of the community required. For this reason, it would be unfair to its consumers to use as a basis for present fair value the abnormal prices prevailing during the recent war period; but, when, as in this case, a part of the plant has been constructed or added to during that period, in fairness to the applicant, consideration must be given to the cost of such expenditures made to meet the demands of the public.'

****677** As to 'd,' supra: The commission, taking $400,000 (round figures), added $25,000 for Bluefield Valley waterworks plant in Virginia, 10 per cent. for going value, and $10,000 for working capital, making $477,500. This may be compared with its final figure, $460,000.

As to 'e,' supra: The commission, on the report of its statistician, found gross investment to be $500,402.53. Its engineer, applying the straight line method, found 19 per cent. depreciation. It applied 81 per cent. to gross investment and added 10 per cent. for going value and $10,000 for working capital, producing $455,500. FN2 This may be compared with its final figure, $460,000.

FN2 As to 'e': $365,445.13 represents investment cost less depreciation. The gross investment was found to be $500,402.53, indicating a deduction on account of depreciation of $134,957.40, about 27 per cent., as against 19 per cent. found by the commission's engineer.

As to 'f,' supra: It is necessary briefly to explain how this figure, $452,520.53, was arrived at. Case No. 368 was a proceeding initiated by the application of the company for higher rates, April 24, 1915. The commission made a valuation as of January 1, 1915. There were presented two estimates of reproduction cost less depreciation, one by a valuation engineer engaged by the company, ***687** and the other by a valuation engineer engaged by the city, both 'using the same method.' An inventory made by the company's engineer was accepted as correct by the city and by the commission. The method 'was that generally employed by courts and commissions in arriving at the value of public utility properties under this method.' and in both estimates 'five year average unit prices' were applied. The estimate of the company's engineer was $540,000 and of the city's engineer, $392,000. The principal differences as given by the commission are shown in the margin. FN3 The commission disregarded both estimates and arrived at $360,000. It held that the best basis of valuation was the net investment, i. e., the total cost of the property less depreciation. It said:

FN3

		Company Engineer.	City Engineer.
1.	Preliminary costs.	$14,455	$1,000
2.	Water rights.	50,000	Nothing
3.	Cutting pavements over. mains.	27,744	233
4.	Pipe lines from gravity. springs.	22,072	15,442
5.	Laying cast iron street. mains.	19,252	15,212
6.	Reproducing Ada springs.	18,558	13,027
7.	Superintendence and. engineering.	20,515	13,621
8.	General contingent cost.	16,415	5,448
		$189,011	$63,983

'The books of the company show a total gross investment, since its organization, of $407,882, and that there has been charged off for depreciation from year to year the total sum of $83,445, leaving a net investment of

(Cite as: P.U.R. 1923D 11, 43 S.Ct. 675)

$324,427. * * * From an examination of the books * * * it appears that the records of the company have been remarkably well kept and preserved. It therefore seems that, when a plant is developed under these conditions, the net investment, which, of course, means the total gross investment less depreciation, is the very best basis of valuation for rate making purposes and that the other methods above referred to should ***688** be used only when it is impossible to arrive at the true investment. Therefore, after making due allowance for capital necessary for the conduct of the business and considering the plant as a going concern, it is the opinion of the commission that the fair value for the purpose of determining reasonable and just rates in this case of the property of the applicant company, used by it in the public service of supplying water to the city of Bluefield and its citizens, is the sum of $360,000, which sum is hereby fixed and determined by the commission to be the fair present value for the said purpose of determining the reasonable and just rates in this case.'

In its report in No. 368, the commission did not indicate the amounts respectively allowed for going value or working capital. If 10 per cent. be added for the former, and $10,000 for the latter (as fixed by the commission in the present case), there is produced $366,870, to be compared with $360,000, found by the commission in its valuation as of January 1, 1915. To this it added $92,520.53, expended since, producing $452,520.53. This may be compared with its final figure, $460,000.

The state Supreme Court of Appeals holds that the valuing of the property of a public utility corporation and prescribing rates are purely legislative acts, not subject to judicial review, except in so far as may be necessary to determine whether such rates are void on constitutional or other grounds, and that findings of fact by the commission based on evidence to support them will not be reviewed by the court. City of Bluefield v. Waterworks, 81 W. Va. 201, 204, 94 S. E. 121; Coal & Coke Co. v. Public Service Commission, 84 W. Va. 662, 678, 100 S. E. 557, 7 A. L. R. 108; Charleston v. Public Service Commission, 86 W. Va. 536, 103 S. E. 673.

In this case (89 W. Va. 736, 738, 110 S. E. 205, 206) it said:

'From the written opinion of the commission we find that it ascertained the value of the petitioner's property for rate making [then quoting the commission] 'after ***689** maturely and carefully considering the various methods presented for the ascertainment of fair value and giving such weight as seems proper to every element involved and all the facts and circumstances disclosed by the record.''

[2] [3] The record clearly shows that the commission, in arriving at its final figure, did not accord proper, if any, weight to the greatly enhanced costs of construction in 1920 over those prevailing about 1915 and before the war, as established by uncontradicted ****678** evidence; and the company's detailed estimated cost of reproduction new, less depreciation, at 1920 prices, appears to have been wholly disregarded. This was erroneous. Missouri ex rel. Southwestern Bell Telephone Co. v. Public Service Commission of Missouri, 262 U. S. 276, 43 Sup. Ct. 544, 67 L. Ed. 981, decided May 21, 1923. Plaintiff in error is entitled under the due process clause of the Fourteenth Amendment to the independent judgment of the court as to both law and facts. Ohio Valley Co. v. Ben Avon Borough, 253 U. S. 287, 289, 40 Sup. Ct. 527, 64 L. Ed. 908, and cases cited.

We quote further from the court's opinion (89 W. Va. 739, 740, 110 S. E. 206):

'In our opinion the commission was justified by the law and by the facts in finding as a basis for rate making the sum of $460,000.00. * * * In our case of Coal & Coke Ry. Co. v. Conley, 67 W. Va. 129, it is said: 'It seems to be generally held that, in the absence of peculiar and extraordinary conditions, such as a more costly plant than the public service of the community requires, or the erection of a plant at an actual, though extravagant, cost, or the purchase of one at an exorbitant or inflated price, the actual amount of money invested is to be taken as the basis, and upon this a return must be allowed equivalent to that which is ordinarily received in the locality in which the business is done, upon capital invested in similar enterprises. In addition to this, consideration must be given to the nature of the investment, a higher rate ***690** being regarded as justified by the risk incident to a hazardous investment.'

'That the original cost considered in connection with the history and growth of the utility and the value of the services rendered constitute the principal elements to be considered in connection with rate making, seems to be supported by nearly all the authorities.'

[4] The question in the case is whether the rates prescribed in the commission's order are confiscatory and therefore beyond legislative power. Rates which are not sufficient to yield a reasonable return on the value of the property used at the time it is being used to render the service are unjust, unreasonable and confiscatory, and their enforcement deprives the public utility company of its property in violation of the Fourteenth Amendment. This is so well settled by numerous decisions of this court that citation of the cases is scarcely necessary:

(Cite as: P.U.R. 1923D 11, 43 S.Ct. 675)

'What the company is entitled to ask is a fair return upon the value of that which it employs for the public convenience.' Smyth v. Ames (1898) 169 U. S. 467, 547, 18 Sup. Ct. 418, 434 (42 L. Ed. 819).
'There must be a fair return upon the reasonable value of the property at the time it is being used for the public. * * * And we concur with the court below in holding that the value of the property is to be determined as of the time when the inquiry is made regarding the rates. If the property, which legally enters into the consideration of the question of rates, has increased in value since it was acquired, the company is entitled to the benefit of such increase.' Willcox v. Consolidated Gas Co. (1909) 212 U. S. 19, 41, 52, 29 Sup. Ct. 192, 200 (53 L. Ed. 382, 15 Ann. Cas. 1034, 48 L. R. A. [N. S.] 1134).
'The ascertainment of that value is not controlled by artificial rules. It is not a matter of formulas, but there must be a reasonable judgment having its basis in a proper consideration of all relevant facts.' Minnesota Rate Cases (1913) 230 U. S. 352, 434, 33 Sup. Ct. 729, 754 (57 L. Ed. 1511, 48 L. R. A. [N. S.] 1151, Ann. Cas. 1916A, 18).
***691** 'And in order to ascertain that value, the original cost of construction, the amount expended in permanent improvements, the amount and market value of its bonds and stock, the present as compared with the original cost of construction, the probable earning capacity of the property under particular rates prescribed by statute, and the sum required to meet operating expenses, are all matters for consideration, and are to be given such weight as may be just and right in each case. We do not say that there may not be other matters to be regarded in estimating the value of the property.' Smyth v. Ames, 169 U. S., 546, 547, 18 Sup. Ct. 434, 42 L. Ed. 819.
'* * * The making of a just return for the use of the property involves the recognition of its fair value if it be more than its cost. The property is held in private ownership and it is that property, and not the original cost of it, of which the owner may not be deprived without due process of law.'

Minnesota Rate Cases, 230 U. S. 454, 33 Sup. Ct. 762, 57 L. Ed. 1511, 48 L. R. A. (N. S.) 1151, Ann. Cas. 1916A, 18.

In Missouri ex rel. Southwestern Bell Telephone Co., v. Public Service Commission of Missouri, supra, applying the principles of the cases above cited and others, this court said:
'Obviously, the commission undertook to value the property without according any weight to the greatly enhanced costs of material, labor, supplies, etc., over those prevailing in 1913, 1914, and 1916. As matter of common knowledge, these increases were large. Competent witnesses estimated them as 45 to 50 per centum. * * * It is impossible to ascertain what will amount to a fair return upon properties devoted to public service, without giving consideration to the cost of labor, supplies, etc., at the time the investigation is made. An honest and intelligent forecast of probable future values, made upon a view of all the relevant circumstances, is essential. If the highly important element of present costs is wholly disregarded, such a forecast becomes impossible. Estimates for to-morrow cannot ignore prices of to-day.'

[5] ***692** It is clear that the court also failed to give proper consideration to the higher cost of construction in 1920 over that in 1915 and before the war, and failed to give weight to cost of reproduction less depreciation on the basis of 1920 prices, or to the testimony of the company's valuation engineer, based on present and past costs of construction, that the property in his opinion, was worth $900,000. The final figure, $460,000, was arrived ****679** at substantially on the basis of actual cost, less depreciation, plus 10 per cent. for going value and $10,000 for working capital. This resulted in a valuation considerably and materially less than would have been reached by a fair and just consideration of all the facts. The valuation cannot be sustained. Other objections to the valuation need not be considered.

3. Rate of return: The state commission found that the company's net annual income should be approximately $37,000, in order to enable it to earn 8 per cent. for return and depreciation upon the value of its property as fixed by it. Deducting 2 per cent. for depreciation, there remains 6 per cent. on $460,000, amounting to $27,600 for return. This was approved by the state court.

[6] The company contends that the rate of return is too low and confiscatory. What annual rate will constitute just compensation depeds upon many circumstances, and must be determined by the exercise of a fair and enlightened judgment, having regard to all relevant facts. A public utility is entitled to such rates as will permit it to earn a return on the value of the property which it employs for the convenience of the public equal to that generally being made at the same time and in the same general part of the country on investments in other business undertakings which are attended by corresponding, risks and uncertainties; but it has no constitutional right to profits such as are realized or anticipated in ***693** highly profitable enterprises or speculative ventures. The return should be reasonably sufficient to assure confidence in the financial soundness of the utility and should be adequate, under efficient and economical management, to maintain and support its credit and enable it to raise the money necessary for the proper discharge of its public duties. A

(Cite as: P.U.R. 1923D 11, 43 S.Ct. 675)

rate of return may be reasonable at one time and become too high or too low by changes affecting opportunities for investment, the money market and business conditions generally.

In 1909, this court, in Willcox v. Consolidated Gas Co., 212 U. S. 19, 48-50, 29 Sup. Ct. 192, 53 L. Ed. 382, 15 Ann. Cas 1034, 48 L. R. A. (N. S.) 1134, held that the question whether a rate yields such a return as not to be confiscatory depends upon circumstances, locality and risk, and that no proper rate can be established for all cases; and that, under the circumstances of that case, 6 per cent. was a fair return on the value of the property employed in supplying gas to the city of New York, and that a rate yielding that return was not confiscatory. In that case the investment was held to be safe, returns certain and risk reduced almost to a minimum-as nearly a safe and secure investment as could be imagined in regard to any private manufacturing enterprise.

In 1912, in Cedar Rapids Gas Co. v. Cedar Rapids, 223 U. S 655, 670, 32 Sup. Ct. 389, 56 L. Ed. 594, this court declined to reverse the state court where the value of the plant considerably exceeded its cost, and the estimated return was over 6 per cent.

In 1915, in Des Moines Gas Co. v. Des Moines, 238 U. S. 153, 172, 35 Sup. Ct 811, 59 L. Ed 1244, this court declined to reverse the United States District Court in refusing an injunction upon the conclusion reached that a return of 6 per cent. per annum upon the value would not be confiscatory.

In 1919, this court in Lincoln Gas Co. v. Lincoln, 250 U. S. 256, 268, 39 Sup. Ct 454, 458 (63 L. Ed. 968), declined on the facts of that case to approve a finding that no rate yielding as much as 6 per cent. ***694** on the invested capital could be regarded as confiscatory. Speaking for the court, Mr. Justice Pitney said:
'It is a matter of common knowledge that, owing principally to the World War, the costs of labor and supplies of every kind have greatly advanced since the ordinance was adopted, and largely since this cause was last heard in the court below. And it is equally well known that annual returns upon capital and enterprise the world over have materially increased, so that what would have been a proper rate of return for capital invested in gas plants and similar public utilities a few years ago furnishes no safe criterion for the present or for the future.'

In 1921, in Brush Electric Co. v. Galveston, the United States District Court held 8 per cent. a fair rate of return. [FN4]

FN4 This case was affirmed by this court June 4, 1923, 262 U. S. 443, 43 Sup Ct 606, 67 L. Ed. 1076.

In January, 1923, in City of Minneapolis v. Rand, the Circuit Court of Appeals of the Eighth Circuit (285 Fed 818, 830) sustained, as against the attack of the city on the ground that it was excessive, 7 1/2 per cent., found by a special master and approved by the District Court as a fair and reasonable return on the capital investment-the value of the property.

[7] Investors take into account the result of past operations, especially in recent years, when determining the terms upon which they will invest in such an undertaking. Low, uncertain, or irregular income makes for low prices for the securities of the utility and higher rates of interest to be demanded by investors. The fact that the company may not insist as a matter of constitutional right that past losses be made up by rates to be applied in the present and future tends to weaken credit, and the fact that the utility is protected against being compelled to serve for confiscatory rates tends to support it. In ***695** this case the record shows that the rate of return has been low through a long period up to the time of the inquiry by the commission here involved. For example, the average rate of return on the total cost of the property from 1895 to 1915, inclusive, was less than 5 per cent.; from 1911 to 1915, inclusive, about 4.4 per cent., without allowance for depreciation. In 1919 the net operating income was approximately $24,700, leaving $15,500, approximately, or 3.4 per cent. on $460,000 fixed by the commission, after deducting 2 per cent. for depreciation. In 1920, the net operating income was approximately $25,465, leaving $16,265 for return, after allowing for depreciation. Under the facts and circumstances indicated by the record, we think that a rate of return of 6 per cent. upon the value of the property is substantially too low to constitute just compensation for the use of the property employed to render the service.

The judgment of the Supreme Court of Appeals of West Virginia is reversed.

Mr. Justice BRANDEIS concurs in the judgment of reversal, for the reasons stated by him in Missouri ex rel. Southwestern Bell Telephone Co. v. Public Service Commission of Missouri, supra.
U.S. 1923
Bluefield Waterworks & Imp. Co. v. Public Service Commission of W. Va.
P.U.R. 1923D 11, 262 U.S. 679, 43 S.Ct. 675, 67 L.Ed. 1176

END OF DOCUMENT

© 2006 Thomson/West. No Claim to Orig. U.S. Govt. Works.

Press Release

March 15, 2020

Coordinated Central Bank Action to Enhance the Provision of U.S. Dollar Liquidity

For release at 5 00 p m EDT

Share

The Bank of Canada, the Bank of England, the Bank of Japan, the European Central Bank, the Federal Reserve, and the Swiss National Bank are today announcing a coordinated action to enhance the provision of liquidity via the standing U S. dollar liquidity swap line arrangements

These central banks have agreed to lower the pricing on the standing U S dollar liquidity swap arrangements by 25 basis points, so that the new rate will be the U S dollar overnight index swap (OIS) rate plus 25 basis points To increase the swap lines' effectiveness in providing term liquidity, the foreign central banks with regular U S dollar liquidity operations have also agreed to begin offering U S dollars weekly in each jurisdiction with an 84-day maturity, in addition to the 1-week maturity operations currently offered These changes will take effect with the next scheduled operations during the week of March 16 [1] The new pricing and maturity offerings will remain in place as long as appropriate to support the smooth functioning of U S dollar funding markets

The swap lines are available standing facilities and serve as an important liquidity backstop to ease strains in global funding markets, thereby helping to mitigate the effects of such strains on the supply of credit to households and businesses, both domestically and abroad

For media inquiries, call 202-452-2955

1 Weekly operations are currently held by the Bank of England, the Bank of Japan, the European Central Bank, and the Swiss National Bank Return to text

Federal Reserve issues FOMC statement

Federal Reserve actions to support the flow of credit to households and businesses

Bank of Canada

Bank of England

Bank of Japan

European Central Bank

Swiss National Bank

Last Update: March 15, 2020

Press Release

Aprıl 06, 2020

Federal Reserve will establish a facility to facilitate lending to small businesses via the Small Business Administration's Paycheck Protection Program (PPP) by providing term financing backed by PPP loans

For release at 2 00 p m EDT

Share

To facılıtate lendıng to small busınesses vıa the Small Busıness Admınıstratıon's Paycheck Protectıon Program (PPP), the Federal Reserve wıll establısh a facılity to provıde term fınancıng backed by PPP loans Additional details wıll be announced this week

For medıa ınquırıes, call 202-452-2955

Last Update: April 06, 2020

Press Release

April 09, 2020

Federal Reserve takes additional actions to provide up to $2.3 trillion in loans to support the economy

For release at 8 30 a m EDT

Share

The Federal Reserve on Thursday took additional actions to provide up to $2 3 trillion in loans to support the economy This funding will assist households and employers of all sizes and bolster the ability of state and local governments to deliver critical services during the coronavirus pandemic

"Our country's highest priority must be to address this public health crisis, providing care for the ill and limiting the further spread of the virus," said Federal Reserve Board Chair Jerome H. Powell "The Fed's role is to provide as much relief and stability as we can during this period of constrained economic activity, and our actions today will help ensure that the eventual recovery is as vigorous as possible "

The Federal Reserve's role is guided by its mandate from Congress to promote maximum employment and stable prices, along with its responsibilities to promote the stability of the financial system In support of these goals, the Federal Reserve is using its full range of authorities to provide powerful support for the flow of credit in the economy

The actions the Federal Reserve is taking today to support employers of all sizes and communities across the country will

- Bolster the effectiveness of the Small Business Administration's Paycheck Protection Program (PPP) by supplying liquidity to participating financial institutions through term financing backed by PPP loans to small businesses The PPP provides loans to small businesses so that they can keep their workers on the payroll The Paycheck Protection Program Liquidity Facility (PPPLF) will extend credit to eligible financial institutions that originate PPP loans, taking the loans as collateral at face value,
- Ensure credit flows to small and mid-sized businesses with the purchase of up to $600 billion in loans through the Main Street Lending Program The Department of the Treasury, using funding from the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) will provide $75 billion in equity to the facility,
- Increase the flow of credit to households and businesses through capital markets, by expanding the size and scope of the Primary and Secondary Market Corporate Credit Facilities (PMCCF and SMCCF) as well as the Term Asset-Backed Securities Loan Facility (TALF) These three programs will now support up to $850 billion in credit backed by $85 billion in credit protection provided by the Treasury, and
- Help state and local governments manage cash flow stresses caused by the coronavirus pandemic by establishing a Municipal Liquidity Facility that will offer up to $500 billion in lending to states and municipalities The Treasury will provide $35 billion of credit protection to the Federal Reserve for the Municipal Liquidity Facility using funds appropriated by the CARES Act

The Main Street Lending Program will enhance support for small and mid-sized businesses that were in good financial standing before the crisis by offering 4-year loans to companies employing up to 10,000 workers or with revenues of less than $2 5 billion Principal and interest payments will be deferred for one year Eligible banks may originate new Main Street loans or use Main Street loans to increase the size of existing loans to businesses Banks will retain a 5 percent share, selling the remaining 95 percent to the Main Street facility, which will purchase up to $600 billion of loans Firms seeking Main Street loans must commit to make reasonable efforts to maintain payroll and retain workers. Borrowers must also follow compensation, stock repurchase, and dividend restrictions that apply to direct loan programs under the CARES Act Firms that have taken advantage of the PPP may also take out Main Street loans

The Federal Reserve and the Treasury recognize that businesses vary widely in their financing needs, particularly at this time, and, as the program is being finalized, will continue to seek input from lenders, borrowers, and other stakeholders to make sure the program supports the economy as effectively and efficiently as possible while also safeguarding taxpayer funds Comments may be sent to the feedback form until April 16

To support further credit flow to households and businesses, the Federal Reserve will broaden the range of assets that are eligible collateral for TALF As detailed in an updated term sheet, TALF-eligible collateral will now include the triple-A rated tranches of both outstanding commercial mortgage-backed securities and newly issued collateralized loan obligations The size of the facility will remain $100 billion, and TALF will continue to support the issuance of asset-backed securities that fund a wide range of lending, including student loans, auto loans, and credit card loans

The Municipal Liquidity Facility will help state and local governments better manage cash flow pressures in order to continue to serve households and businesses in their communities The facility will purchase up to $500 billion of short term notes directly from U S states (including the District of Columbia), U S counties with a population of at least two million residents, and U S cities with a population of at least one million residents Eligible state-level issuers may use the proceeds to support additional counties and cities In addition to the actions described above, the Federal Reserve will continue to closely monitor conditions in the primary and secondary markets for municipal securities and will evaluate whether additional measures are needed to support the flow of credit and liquidity to state and local governments

All of the facilities mentioned above are established by the Federal Reserve under the authority of Section 13(3) of the Federal Reserve Act, with approval of the Treasury Secretary

The Federal Reserve remains committed to using its full range of tools to support the flow of credit to households and businesses to counter the economic impact of the coronavirus pandemic and promote a swift recovery once the disruptions abate

For media inquiries, call 202-452-2955

Term Sheet: Term Asset-Backed Securities Loan Facility (PDF)

Term Sheet Primary Market Corporate Credit Facility (PDF)

Term Sheet: Secondary Market Corporate Credit Facility (PDF)

Term Sheet: Municipal Liquidity Facility (PDF)

Term Sheet: Paycheck Protection Program Lending Facility (PDF)

Main Street Lending Program
Term Sheet Main Street New Loan Facility (PDF)
Term Sheet: Main Street Expanded Loan Facility (PDF)

Related Content

Board Votes

Term Asset-Backed Securities Loan Facility

Primary Market Corporate Credit Facility

Second Market Corporate Credit Facility

Last Update: April 09, 2020

S&P Global
Market Intelligence

Trump signs $484B coronavirus relief package into law

Friday, April 24, 2020 12:47 PM ET

By Alison Bennett
Market Intelligence

President Donald Trump signed a measure April 24 that will give the Small Business Administration more than $300 billion in new funding for emergency loans to small companies dealing with the economic fallout of the coronavirus

The action came after the House overwhelmingly passed the $484 billion Paycheck Protection Program and Health Care Enhancement Act on April 23. The Senate passed the bill via unanimous consent April 21

The measure grants the SBA $310 billion in additional money for its Paycheck Protection Program, designed to provide small businesses with loans of up to $10 million that will be forgiven if 75% of the money is allocated to payroll and 25% to rent, utilities and mortgage interest

As a result of intense negotiations between Democrats and Republicans, $60 billion of the $310 billion is designated specifically for smaller lenders, which lawmakers hope will ensure the money ends up going to small businesses.

Of that $60 billion, $30 billion will go to loans made by insured depository institutions and credit unions with assets between $10 billion and $50 billion, while the remaining $30 billion will be set aside for loans made by community banks, small insured depository institutions and credit unions with assets less than $10 billion

That carve-out was welcomed by the Independent Community Bankers of America, which lobbied for specific funding for smaller lenders.

"These funds will help small-business customers in urban, suburban and rural communities weather the COVID-19 emergency," ICBA President and CEO Rebeca Romero Rainey said following the House vote

The PPP began as part of the $2 trillion Coronavirus Aid, Relief, and Economic Security Act and originally had $349 billion in funds, but that money ran out in less than two weeks Despite the additional cash infusion, some stakeholders fear the new funding will also run dry quickly due to the large number of loan applications still in the pipeline and a huge wave of new applications expected

In addition to the PPP money, the new legislation will give the SBA $50 billion for disaster relief loans and $10 billion for emergency Economic Injury Disaster Loan grants. It also clarifies that agricultural enterprises are eligible for PPP loans.

The law will also provide $75 billion for hospitals and $25 billion for coronavirus testing. Democrats had strongly sought more money for state and local governments but were not able to secure it in this relief package

This article was published by S&P Global Market Intelligence and not by S&P Global Ratings, which is a separately managed division of S&P Global

Licensed to jnelson@scottmadden com

Interest rates change

Marcus:
by Goldman Sachs

COMMENTARY

Correlations Going to 1: Amid Market Collapse, U.S. Stock Fund Factors Show Little Differentiation

We don't see connections between portfolio characteristics and returns when looking through the lens of our Factor Profile data.

David Carey, Tom Lauricella
Mar 6, 2020

Editor's note: Read the latest *on how the coronavirus is rattling the markets and what investors can do to navigate it.*

There's an old saying in the financial markets that, during a time of crisis, "Correlations go to 1."

The meaning here is that when there's a panicked rush to the exits--as global stock markets have seen amid the spread of the coronavirus--all stocks are punished equally and indiscriminately. And fund investors have seen this sell first, ask questions later exodus in their portfolios.

While losses may just feel like losses, all market declines aren't alike. Often a market drop will see the asset classes or sectors that had done the best heading into the sell-off reverse course and post the largest declines. In that kind of environment, investments that had lagged tend to be more buoyant. In addition, in an orderly stock market retrenchment, defensive sectors such as higher-yielding stocks will also outperform.

But that hasn't been the case during the coronavirus market collapse.

No hidden fees. No surprises. TD Ameritrade

This sell-everything environment can be seen first through overall returns. On average, all nine categories of U S. diversified stock funds lost between 10.8% and 11.6% starting from Feb. 19--when the S&P 500 hit a record high--and Feb. 27. That margin is a very narrow range for a chaotic market.

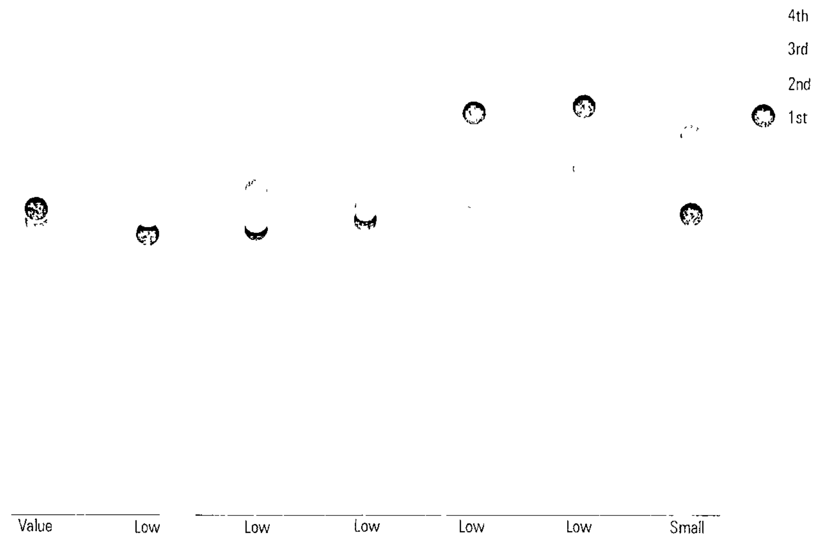
The run-for-the-hills mentality also became clear when we scouted for connections--or, in this case, a lack of connections--between portfolio characteristics and returns by looking at funds through the lens of Morningstar's Factor Profile data. This data set measures a fund's portfolio based on seven metrics size, style, yield, momentum, quality, volatility, and liquidity.

When we measure fund performance against these factors, we can see clear patterns of a "correlations go to 1" market. For this article, we focused on the universe of U.S. diversified-stock funds.

Between Feb 19 and Feb. 27, whether funds tended to invest in growth or stocks, high yield or low yield, or strong or weak momentum, there was little overall differentiation. There was only a tiny bit more shelter to be found from the storm in funds focused on lower-volatility stocks.

U S. Diversified Stock Fund Average Factor Exposures Broken Down by Return Quintiles, Feb. 19-27

Style	Yield	Momentum	Quality	Volatility	Liquidity	Size	
Growth	High	High	High	High	High	Large	1-Week Return Quintile Rank
							5th

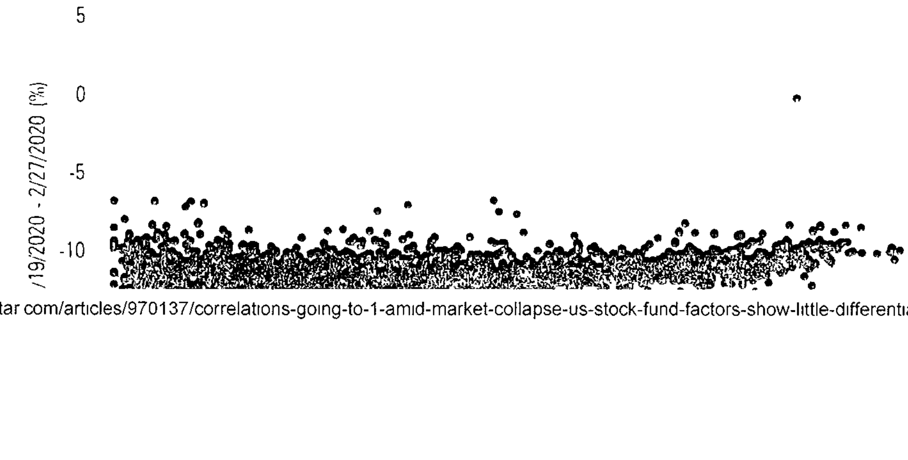


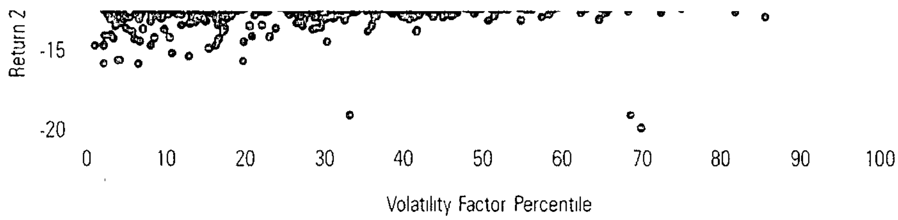
As hıghlighted in our artıcle "What's Driving U.S. Stock Fund Returns? ," during the three years ended Dec. 31, funds focused on the bıggest, fastest-growing companıes or stocks that were already on an uptrend performed better than funds that loaded up on smaller, undervalued companies or those without a clear uptrend or downtrend in place.

Volatility

Not too surprisingly, one of the characteristıcs that played out slightly better over the course of the recent sell-off were portfolios dominated by low-volatility stocks. Yet, the returns are stıll negatıve across the board regardless of high- or low-volatility exposure and the gap between.

Volatility and Returns, U.S. Equity Funds



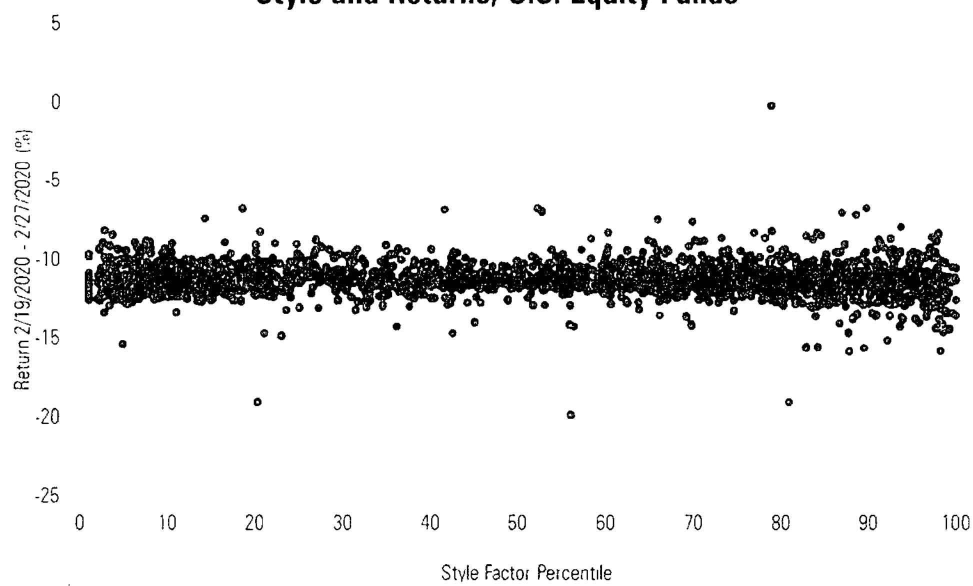


Value Versus Growth

The outperformance of growth strategies over value during the market's bull run has been one of the stock market's most dominant trends in the past three years. Value funds have had only sporadic bouts of outperformance recently, such as during last August's stock market slide, which was sparked by fears of a U.S. recession

But in the virus sell-off, there's been little distinction.

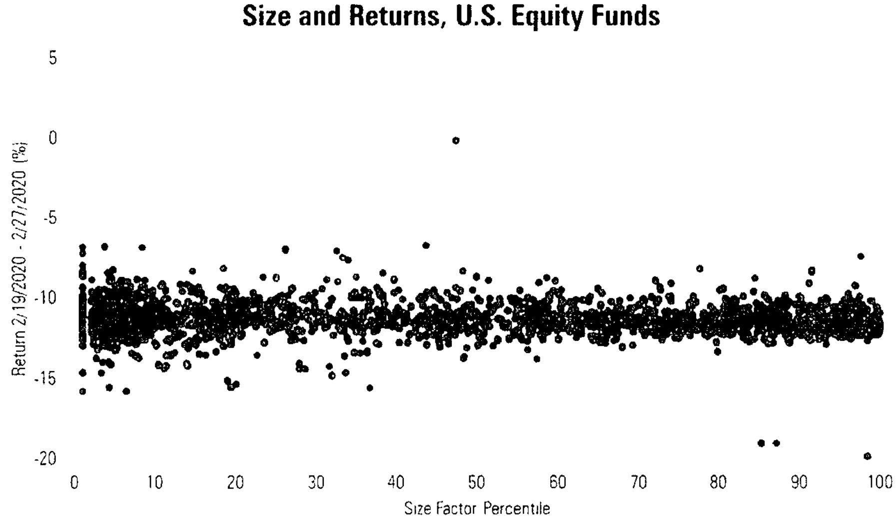
Style and Returns, U.S. Equity Funds



During the Feb. 19-27 time period, value funds posted an average loss of 11 25% versus a 11.11% average drop for growth funds.

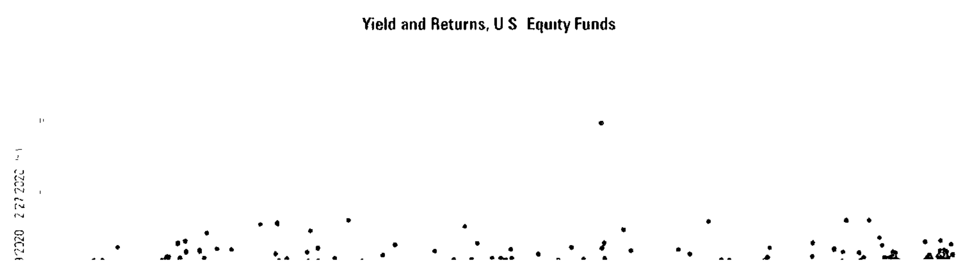
Size

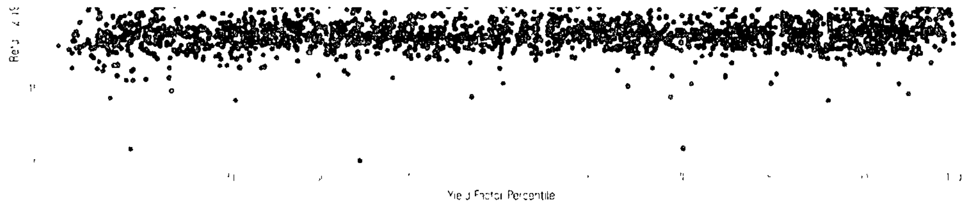
Another clear trend over the past few years has been the outperformance of portfolios with larger-cap stocks. But again, since Feb. 19, on average there was no material differentiation in performance based on market capitalization. Returns of small- and large-cap stocks were nearly identical since Feb. 19, with small caps posting a negative 10.94% return compared with large-cap returns of negative 11.30%.



Yield

Yield can often offer investors a safe haven when markets get turbulent. This time around, yield exposure did not affect fund performance.





The full version of this article if available to Morningstar Direct and Office client here.

SHARE THIS ARTICLE

Sponsor Center

T. Rowe Price

Premium

Alexa, enable the Morningstar

Morningstar Personal Finance Center

Alexa, enable the Morningstar

Maintain your focus with Morningstar Premium analysis. Start Free Trial

MORNINGSTAR

© Copyright 2020 Morningstar, Inc. All rights reserved.

Dow Jones Industrial Average, S&P 500, Nasdaq, and Morningstar Index (Market Barometer) quotes are real-time.

Blue Chip Economic Indicators®

Top Analysts' Forecasts of the U.S. Economic Outlook for the Year Ahead

Vol. 45, No. 4, April 10, 2020

Wolters Kluwer

BLUE CHIP ECONOMIC INDICATORS®

Executive Editor:
Joseph Aguinaldo
Director of Data Research & Analytics
Haver Analytics, Inc.
60 East 42nd Street
New York, NY 10165
+1 212 986 9300
email *bluechip@haver.com*

Robert J. Eggert, Founder
Randell E. Moore, Editor Emeritus
Dom Cervi, Publisher

Blue Chip Economic Indicators® (ISSN: 0193-4600) is published monthly by CCH Incorporated, 76 Ninth Avenue, New York, NY 10011. Printed in the U.S.A.

Subscriptions: $1,791 per year for print delivery of 12 monthly issues. For alternate formats (PDF, Excel, online), multiple-copy rates and site-license agreements call Chris Carr in the U.S. at 212-771-0881. You may also contact him at: chris.carr@wolterskluwer.com

Permission requests: For information on how to obtain permission to reproduce content, please visit the Wolters Kluwer website at: http://www.wklawbusiness.com/footer-pages/permissions

Purchasing reprints: For customized article reprints, please contact *Wright's Media* at 1-877-652-5295 or go to the *Wright's Media* website at *www.wrightsmedia.com*

Customer Service: 1-800-234-1660
To Order: 1-800-638-8437
Customer Service Fax: 1-800-901-9075
Email: customer.service@wolterskluwer.com
Web Site:
https://lrus.wolterskluwer.com/bluechip.asp

Blue Chip Economic Indicators® is a general circulation news monthly. No statement in this issue is to be construed as a recommendation to buy or sell securities or to provide investment advice. The editor and Aspen Publishers, while considering the contents to be accurate and reliable, take no responsibility for the information contained herein.

Copyright © 2020 CCH Incorporated. All Rights Reserved. This material may not be used, published, broadcast, rewritten, copied, redistributed or used to create any derivative works without prior written permission from the publisher.

TABLE OF CONTENTS

Coronavirus Hurts: GDP -4.1% in 2020, Unemployment Rate Peak at 14.0%

- **GDP expected to drop at 24.5% rate in Q2**
- **Consumer spending down 4.4% for 2020; business investment -9.0%**
- **Business closures with social distancing forecast to push unemployment rate to historic high**
- **Policymakers already active, even before there's much actual data on how severe the economic contraction is**
- **FOMC meets on a Sunday morning**

This month's Blue Chip Economic Indicators panel's forecast for real GDP in Q2 2020 is estimated to set a historical record – by far: a plunge of -24.5% SAAR. The previous record was -10.0% in Q1 1958; quarterly data began in Q1 1947. In its February forecast, the panel had projected Q2 growth to be 1.9% SAAR and in March 1.0%.

This turnabout well summarizes the anticipated impact of the coronavirus on the U.S. economy. Thankfully, the panel does expect that the easing of the current outbreak of the disease and accompanying social distancing practices will support a visible recovery in the second half of this year and on into 2021. However, the speed of the recovery would be nowhere near the magnitude of the drop. In the Consensus forecast, real GDP would not recover to its previous peak until the fourth quarter of 2021.

For this year as a whole, GDP would fall -4.1% from 2019, compared to the March estimate of +1.7%. In 2021, growth would be 3.8%; that's up noticeably from the 2.0% forecast a month ago. At the same time, as noted above, this does not make up for the steep decline, so the level of GDP at the end of 2021 would still be 3.1% below the amount forecast last month. By sector, consumer spending is now seen at -4.4% on the year, versus +2.0% in last month's forecast, with 2021 up 4.1%, twice what was projected in March. Business fixed investment at -9.0% for 2020 compares with a flat forecast in March, while this month's forecast for 2021 would see little difference from a month ago, with growth of 3.0% now versus 2.9% last month. The evident lack of rebound in business investment is indicative of the long-term damage that COVID-19 can create, as it has consequences for future potential economic growth.

Unemployment up dramatically. These forecast numbers accompany a commensurate surge in unemployment; while it is logical given the move in GDP, the measured unemployment is still mind-blowing. In a Special Question, the panel generates an average "peak" of 14.0%. At the end of 2020, the rate is still expected to be 9.2%. For this year as a whole, it would average 8.8%, which includes the 50-year low rates in January and February; last month, the forecast called for 3.6% for all of 2020, near those attractive early-year rates. So it seems to be going from historic lows to historic monthly highs very quickly. The consensus "peak" of 14% would be an outright record for the monthly data which go back to 1948; the previous monthly high was 10.8% in November 1982, and during the 2008-2009 Great Recession, it was 10.0% in October 2009.

But large counteracting policy actions have already started Frightening as these numbers are, it's obviously important to take account of the fact that public policy actions have already been taken to try to offset some of coronavirus impact on business, jobs and consumer well-being. The onset of the problem was enough to spur substantial monetary and fiscal policy moves, before there was numerical evidence in hand of the extent of the troubles that would ensue.

Sharp rate cuts by Fed, with massive adds to assets coming. The Federal Reserve made two unusual cuts in the target federal funds rate during March. The first, on March 2 and 3, moved the rate from 1.50%-1.75% to 1.00%-1.25%. That took place on a Monday evening and Tuesday, with the rate change taking effect on the Wednesday. No meeting of the Federal Open Market Committee, the official rate-setting body, had been officially scheduled for those days; they met on an ad hoc basis by videoconference. Not quite two weeks later and before their meeting slated for March 17-18, the Committee met by phone on a Sunday morning; they were very concerned about disruptions that had been affecting trading in financial markets and decided they couldn't wait even two more days to make their policy decision moving the funds rate to 0.0%-0.25%. They also encouraged banks to use special liquidity and capital "buffers" to increase the amount of lending the banks can do to households and businesses.

The recent legislation passed by Congress provides for the Treasury to guarantee some Fed lending programs, so that the Fed, which cannot take on credit risk, can purchase non-government-backed assets such as student loans and corporate debt. In addition, just on April 9, the Federal Reserve announced several financing facilities to make available $2.3 trillion to small and medium-sized businesses, state and local governments and other credit needs. In a Special Question, we asked panelists about the expansion of the Fed's balance sheet, which is an indicator of how much support the Fed would provide altogether. From a recent amount of total assets of roundly $4.1 trillion, the panel estimates just about a doubling to $8.6 trillion by year-end. Relative to the projected value of nominal GDP, this forecast suggests that the Fed, whose assets provided liquidity equal to about 19% of GDP in Q1, would then be supporting just under 43% in Q4.

Blue Chip panel thinks more aid needed. While the numbers in the recent government programs are also large, for example, the $2.2 trillion in the CARES Act, the Blue Chip panel is skeptical that the current set of programs is sufficient. In another Special Question, 88.6% say that the CARES programs are not enough, and they estimate that another $2.3 trillion will be needed. Congress is discussing several spending bills at the moment, but there is disagreement on the contents, although some infrastructure would likely be included.

Nonetheless, the panelists do think the CARES Act is helping. Just over half of them say that they raised their annual GDP forecast after the bill was passed, adding 2.3%. Thus, while there is significant pain – and an 87% chance that a recession began in the first quarter -- some of the pain that might have been suffered may well have been alleviated by the prompt enactment of these programs.

Carol Stone, CBE (Haver Analytics, New York, NY)

2020 Real GDP Forecast Decreases to -4.1%

APRIL 2020 Forecast for 2020 SOURCE:	Percent Change 2020 From 2019 (Full Year-Over-Prior Year) 1 Real GDP (Chained) (2012$)	2 GDP Price Index	3 Nominal GDP (Cur $)	4 Consumer Price Index	5 Indust Prod (Total)	6 Dis Pers Income (2012$)	7 Personal Cons Exp (2012$)	8 Non-Res Fix Inv (2012$)	9 Corp Profits (Cur $)	Average For 2020 10 Treas Bills 3-mo	11 Treas Notes 10-Year	12 Unempl Rate (Civ)	Total Units-2020 13 Housing Starts (Mil)	14 Auto&Light Truck Sales (Mil)	2020 15 Net Exports (2012$)
MUFG Union Bank	0.6 H	1.8	2.4 H	2.0 H	-4.2	0.0	-0.1 H	-20.0 L	-20.0	0.8 H	0.9	9.7	1.10	10.0	-670.0
AIG	-0.6	1.2	0.5	0.9	-1.5	4.2 H	-0.7	-4.2	-13.5	0.4	1.3	5.4	1.29	15.6	-791.8
Action Economics	-0.7	1.5	0.8	1.5	-3.3	3.8	-0.7	-6.3	-6.2	0.5	0.9	5.1	1.37	13.9	-882.4
Amherst Pierpont Securities	-0.7	1.7	1.0	1.5	-7.6	0.9	-1.0	-3.8	-12.0	0.4	1.3	6.2	1.37	14.0	-864.0
BNP Paribas North America	-0.7	na	na	1.2	0.2 H	2.4	-1.3	-2.4	na	na	na	3.8 L	na	na	na
Visa	-1.1	1.3	0.1	1.0	na	-0.9	-1.3	-5.0	-0.6	0.2	0.8	6.7	1.32	14.7	-895.6
Daiwa Capital Markets America	-1.9	1.7	-0.2	1.9	-3.4	-0.5	-3.4	-2.3	0.3	0.4	1.1	8.5	1.35	15.1	-805.8
Econoclast	-1.9	1.1	-0.6	0.9	-3.9	-1.2	-2.9	-5.5	-5.1	0.4	0.8	6.9	1.29	12.9	-870.0
Eaton Corporation	-2.1	1.4	-0.7	0.8	-3.8	-2.1	-3.3	-3.9	na	0.4	1.2	6.7	1.34	14.0	-814.8
Moody's Analytics, US	-2.2	1.2	-1.0	0.7	-2.8	2.4	-0.8	-7.2	-7.6	0.4	0.8	6.3	1.16	14.5	-942.3
Societe Generale	-2.3	1.2	-1.1	1.7	na	0.0	-1.7	-7.0	-22.0	0.1 L	1.1	7.4	1.19	13.8	-935.0
Naroff Economic Advisors*	-2.5	0.9	-1.6	0.5	-3.1	-0.7	-3.6	-4.8	-50.0 L	0.4	1.0	13.5	1.12	12.9	-910.0
Credit Suisse	-2.6	2.1 H	-0.6	1.3	na	na	-1.6	-5.9	na	na	na	7.2	na	na	-934.5
PNC Financial Services Group	-2.7	1.0	-1.7	0.0 L	-4.6	1.0	-3.6	-8.2	-4.7	0.4	1.2	5.6	1.33	14.2	-700.3
Economist Intelligence Unit, UK	-2.9	0.9	-2.0	0.1	-11.0	-3.4	-2.8	-12.5	na	0.4	1.1	10.7	0.50 L	8.5 L	-892.0
Swiss Re	-3.0	0.7	-2.3	1.0	-5.3	0.9	-3.7	-4.9	-14.7	0.4	1.1	9.3	1.21	16.7 H	-914.9
Wells Fargo, US	-3.0	0.9	-2.1	1.2	-4.1	-3.4	-2.8	-8.0	-7.0	0.1 L	1.0	9.7	1.17	12.1	-863.9
Fannie Mae	-3.7	1.4	-2.4	0.8	-9.8	3.9	-4.6	-9.0	-14.6	0.4	0.9	7.9	1.17	13.7	-656.0
Inforum - Univ of Maryland	-3.7	1.1	-2.7	1.0	-9.5	-1.8	-2.1	-10.4	-15.3	0.4	1.1	7.0	0.76	13.3	-807.0
Northern Trust Company*	-3.7	0.9	-2.8	1.2	-7.8	0.8	-3.5	-9.2	-2.9	0.4	1.0	9.1	1.22	14.0	-900.7
MacroFin Analytics & Rutgers Bus School	-3.9	1.5	-2.4	0.7	-9.8	1.6	-5.5	-9.8	-11.4	0.4	0.9	9.3	1.00	13.1	-837.5
Moody's Capital Markets, US*	-3.9	0.7	-3.2	0.8	-6.6	-0.8	-5.6	-2.7	-6.0	0.4	1.0	7.0	1.07	15.0	-846.3
BMO Capital Markets*	-4.0	1.3	-2.7	0.9	-6.7	-3.0	-5.0	-6.6	-13.7	0.4	0.9	7.3	1.32	13.0	-868.0
NatWest Markets	-4.1	1.3	-2.8	0.7	na	na	-3.8	-7.7	na	0.2	1.0	9.2	0.99	13.6	-854.2
Oxford Economics, US	-4.1	1.0	-3.5	0.7	-7.7	-1.8	-6.7	-9.0	8.0 H	0.4	1.0	9.8	1.25	12.7	-824.2
Barclays, US*	-4.5	1.2	-3.4	0.9	-3.1	na	-5.4	-10.1	na	na	0.9	8.8	1.58 H	na	-694.7
National Assn of Home Builders	-4.6	1.3	-3.2	0.6	0.1	2.0	-4.9	0.0 H	na	0.1 L	1.1	10.1	1.08	16.6	-663.0
Comerica**	-5.1	1.1	-4.1	1.1	-8.8	1.0	-6.8	-12.0	na	0.4	0.9	11.0	0.93	11.9	-474.6 H
ACT Research*	-5.2	1.8	-3.4	0.2	-19.0	na	-5.0	-10.5	na	0.4	0.9	8.5	1.41	13.0	-622.6
UBS	-5.2	1.9	-3.4	0.7	-1.9	-1.7	-5.1	-9.2	na	0.2	0.8	11.3	na	na	-854.2
JP MorganChase, US	-5.3	1.4	-4.0	1.4	-1.7	-4.0	-7.4	-1.1	-6.9	na	1.0	6.4	1.36	15.9	-931.8
Macroeconomic Advisers by IHS Markit**	-5.4	1.5	-4.0	0.7	-12.2	2.9	-5.5	-11.1	-20.3	0.3	0.8	8.0	1.08	13.2	-608.8
Regions Financial Corporation	-5.4	1.8	-3.7	1.3	-8.8	-0.9	-5.3	-10.3	-6.1	0.5	1.0	9.9	1.20	11.7	-827.5
Morgan Stanley, US**	-5.5	1.2	-4.3	0.7	-4.4	-1.2	-6.4	-15.9	na	0.3	0.8	9.9	na	na	-782.8
National Retail Federation	-5.6	0.9	-4.7	0.5	-6.2	1.0	-5.6	-11.0	-7.0	0.1 L	0.8	11.5	0.94	11.9	-652.0
Ford Motor Company*	-5.7	1.6	-4.2	0.6	-12.8	2.7	-5.6	-19.7	na	0.3	0.8	8.2	1.07	na	-636.5
Bank of America-Merrill Lynch, US**	-6.0	1.0	-5.6	0.8	-4.7	na	-8.3	-6.5	na	na	1.5 H	10.6	1.25	12.8	-776.1
Grant Thorton/Diane Swonk	-6.1	1.4	-4.8	0.6	-12.9	2.4	-6.5	-12.7	-20.0	0.4	0.9	9.2	1.04	9.7	-571.7
Goldman Sachs & Co **	-6.2	1.4	-4.9	1.3	-12.3	-5.8	-4.3	-9.9	na	0.4	0.6 L	10.3	1.42	na	-1126.1 L
Georgia State University*	-6.5	0.8	-5.8	1.5	-13.8	2.1	-6.7	-12.5	-32.7	0.2	1.0	8.3	0.93	11.7	-542.0
Point72 Asset Management*	-6.5	0.4 L	-6.2	1.1	-7.5	-6.6	-6.5	-11.6	-35.0	0.4	1.0	9.6	1.10	10.7	-907.3
UCLA Anderson Forecast*	-6.6	1.3	-5.3	0.5	-13.7	1.9	-4.9	-12.2	-20.0	0.3	0.8	9.8	0.92	12.0	-560.0
ACIMA Private Wealth, US	-6.9	1.2	-5.7	0.0 L	-16.0	-1.3	-5.9	-18.3	-26.5	0.2	0.9	11.9	0.98	11.9	-735.0
Nomura Securities, US	-9.0	1.7	-7.3	0.0 L	-4.3	na	-10.1 L	-19.6	na	na	0.7	12.6	1.15	13.0	-503.3
SOM Economics, Inc	-14.0 L	1.4	-12.8 L	1.4	-20.0 L	-8.0 L	-10.0	-18.0	-45.0	0.4	0.8	14.0 H	1.05	9.0	-840.0
2020 Consensus: April Avg.	**-4.1**	**1.3**	**-3.0**	**0.9**	**-7.3**	**-0.3**	**-4.4**	**-9.1**	**-14.6**	**0.3**	**1.0**	**8.8**	**1.16**	**13.1**	**-786.2**
Top 10 Avg	-1.1	1.8	0.2	1.6	-2.1	2.9	-1.1	-3.0	-3.0	0.5	1.2	11.7	1.39	15.2	-582.8
Bottom 10 Avg	-7.4	0.8	-6.3	0.3	-14.4	-4.0	-7.5	-16.1	-29.2	0.2	0.8	5.9	0.90	10.7	-939.8
March Avg	1.7	1.8	3.5	1.9	0.1	2.0	2.0	0.0	1.2	1.1	1.4	3.6	1.38	16.6	-939.2
Historical data 2016	1.6	1.0	2.7	1.3	-2.0	1.8	2.7	0.7	-2.4	0.3	1.8	4.9	1.17	17.5	-783.7
2017	2.4	1.9	4.3	2.1	2.3	2.9	2.6	4.4	-0.3	0.9	2.3	4.3	1.20	17.1	-849.8
2018	2.9	2.4	5.4	2.4	3.9	4.0	3.0	6.4	3.4	2.0	2.9	3.9	1.25	17.2	-920.0
2019	2.3	1.8	4.1	1.8	0.8	2.9	2.6	2.1	0.0	2.1	2.1	3.7	1.29	17.0	-953.9
Number of Forecasts Changed From a Month Ago															
Down	45	33	43	41	38	29	44	44	28	33	35	0	31	31	5
Same	0	4	0	0	0	1	0	0	0	1	2	0	1	2	0
Up	0	7	1	4	1	9	0	0	1	4	4	45	8	4	38
April Median	-4.0	1.3	-3.0	0.9	-6.6	0.0	-4.9	-9.0	-12.8	0.4	0.9	9.1	1.17	13.1	-825.9
April Diffusion Index	0%	20%	2%	9%	3%	24%	0%	0%	3%	12%	12%	100%	21%	14%	88%

*Former winner of annual Lawrence R. Klein Award for Blue Chip Forecast Accuracy. **Denotes two-time winner.

2021 Real GDP Forecast Increases to 3.8%

APRIL 2020 Forecast for 2021 SOURCE:	Percent Change 2021 From 2020 (Full Year-Over-Prior Year)									Average For 2021			Total Units-2021		2021
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Real GDP (Chained) (2012$)	GDP Price Index	Nominal GDP (Cur $)	Consumer Price Index	Indust Prod (Total)	Dis Pers Income (2012$)	Personal Cons Exp (2012$)	Non-Res Fix Inv (2012$)	Corp Profits (Cur $)	Treas Bills 3-mo	Treas Notes 10-Year	Unempl Rate (Civ)	Housing Starts (Mil)	Auto&Light Truck Sales (Mil)	Net Exports (2012$)
SOM Economics, Inc	7.8 H	1.8	9.7 H	1.9	14.0 H	7.0 H	6.0	12.0	30.0	0.2	0.7 L	10.0	1.15	13.0	-890.0
Oxford Economics, US	7.7	1.8	9.4	1.6	8.2	3.4	9.9 H	10.6	10.2	0.2	1.4	5.8	1.29	16.0	-938.8
Point72 Asset Management*	7.2	1.3	8.6	1.7	5.6	5.9	7.3	9.2	40.0	0.1	1.1	6.5	1.25	14.2	-916.7
Macroeconomic Advisers by IHS Markit**	6.3	1.4	7.8	2.1	0.3	1.5	7.2	4.5	47.3 H	0.1	1.0	7.9	1.12	15.1	-829.6
Bank of America-Merrill Lynch, US**	6.1	1.8	7.5	2.2	5.7	na	7.7	0.8	na	na	na	7.9	1.29	15.0	-822.2
Ford Motor Company*	6.1	1.4	7.6	2.0	0.5	1.5	6.6	14.3 H	na	0.1	0.9	8.0	1.11	na	-834.1
BMO Capital Markets*	6.0	1.5	7.5	1.6	3.2	2.4	6.0	5.3	3.0	0.2	1.2	5.9	1.32	15.6	-893.0
ACT Research*	5.8	2.0	7.8	1.4	12.2	na	5.5	6.0	na	0.2	1.2	7.5	1.22	16.0	-848.0
Grant Thorton/Diane Swonk	5.8	1.1	7.0	1.8	-0.3	1.2	6.6	3.1	43.5	0.1	0.8	8.7	1.34	16.6	-771.1
Goldman Sachs & Co **	5.5	1.7	7.5	1.9	7.8	4.7	4.0	6.4	na	0.3	1.1	7.1	1.51	na	-1328.0 L
Morgan Stanley, US**	5.3	2.2	7.6	2.5	-0.1	6.2	5.9	5.1	na	0.0 L	1.5	6.6	na	na	-847.2
UCLA Anderson Forecast*	5.3	0.3 L	5.6	1.2	-1.2	1.0	3.7	0.7	20.0	0.1	1.1	10.3	1.02	13.9	-700.0
Fannie Mae	5.0	1.0	6.0	1.4	-0.2	1.7	5.9	4.3	32.4	0.3	0.8	6.2	1.26	14.5	-908.0
Moody's Capital Markets, US*	4.8	1.3	6.1	1.1	7.0	1.2	5.5	1.2	7.0	0.4	1.5	4.2	1.33	16.5	-848.4
National Assn of Home Builders	4.6	1.5	6.2	2.4	1.6	1.9	4.5	2.9	na	0.1	1.0	7.8	1.33	16.5	-808.8
Comerica**	4.5	1.4	5.9	1.3	5.7	3.3	5.4	4.9	na	0.1	0.8	14.2 H	1.05	15.1	-649.4
JP MorganChase, US	4.5	2.2	6.8	1.3	2.0	1.2	4.6	3.8	1.5	na	na	5.3	1.44	16.9	-977.7
UBS	4.3	2.0	6.4	0.3	2.3	2.4	4.7	2.9	na	0.1	0.8	8.3	na	na	-918.8
Action Economics	3.9	2.0	6.0	2.2	3.5	0.7	4.4	7.7	14.1	0.6	1.0	3.6 L	1.41	16.5	-1037.7
Amherst Pierpont Securities	3.8	2.3	6.1	2.6	8.5	2.2	3.6	6.4	17.0	1.0 H	2.6 H	4.4	1.47	17.0	-922.0
National Retail Federation	3.8	1.4	5.2	1.2	4.8	3.2	6.0	4.5	6.0	0.1	0.8	9.0	1.01	14.9	-852.0
PNC Financial Services Group	3.8	1.4	5.2	1.7	3.9	-0.3	4.5	0.9	3.5	0.3	1.4	4.6	1.60 H	17.3 H	-756.6
Inforum - Univ of Maryland	3.6	1.3	4.9	1.1	7.7	2.8	3.3	2.3	8.9	0.4	1.5	5.4	1.02	15.1	-885.3
Daiwa Capital Markets America	3.5	1.9	5.5	2.1	3.3	2.2	3.7	2.8	2.9	1.0 H	2.0	5.3	1.33	16.6	-824.9
NatWest Markets	3.5	1.6	5.2	2.2	na	na	4.0	4.2	na	0.0 L	1.1	9.2	1.20	16.2	-942.5
Eaton Corporation	3.3	1.5	4.8	2.5	3.8	3.4	3.7	3.8	na	0.3	1.7	6.2	1.35	16.7	-916.2
Nomura Securities, US	3.2	1.6	4.8	-0.5 L	-1.6	na	5.7	-6.2	na	na	1.3	10.2	1.32	16.0	-687.3
Credit Suisse	2.9	na	5.2	1.9	na	na	2.1	0.6	na	na	na	5.0	na	na	-932.1
Econoclast	2.9	1.7	4.6	1.7	2.2	2.3	3.2	2.5	3.5	0.2	1.1	5.6	1.35	15.2	-877.0
Swiss Re	2.9	1.4	4.3	1.7	1.5	1.7	1.9	4.8	3.5	0.2	1.0	6.3	1.24	16.6	-945.8
Moody's Analytics, US	2.7	1.3	4.0	2.8 H	2.2	-1.2	1.6	1.7	22.2	0.3	1.4	6.6	1.53	16.4	-890.6
Northern Trust Company*	2.6	0.9	3.7	1.1	1.9	0.9	2.8	3.9	1.7	0.1	1.5	7.3	1.23	16.4	-1062.2
AIG	2.5	1.5	4.1	2.7	0.6	-1.8 L	1.1	2.7	13.7	0.2	1.6	5.2	1.28	15.5	-629.9
Barclays, US*	2.4	1.5	3.9	1.3	0.1	na	2.3	-0.6	na	na	na	6.1	na	na	-624.5
BNP Paribas North America	2.4	na	na	2.1	2.3	2.8	3.2	3.5	na	na	na	4.4	na	na	na
Regions Financial Corporation	2.3	1.1	3.4	1.2	1.3	0.0	3.6	-2.9	3.6	0.3	1.1	8.6	1.17	14.4	-936.7
ACIMA Private Wealth, US	2.0	0.9	2.9	1.5	6.7	2.9	3.5	9.2	15.5	0.0 L	1.4	11.4	1.08	14.2	-875.0
Wells Fargo, US	1.7	1.6	3.3	1.7	-0.4	4.5	2.9	0.2	10.0	0.2	1.4	6.8	1.22	16.2	-1041.1
Economist Intelligence Unit, UK	1.6	0.9	2.5	1.3	1.9	1.4	1.6	-2.0	na	0.3	1.4	9.1	1.10	11.0	-895.3
Visa	1.6	2.0	3.6	2.2	na	2.1	1.6	1.0	2.5	0.3	1.0	6.8	1.35	16.3	-984.3
MUFG Union Bank	1.5	1.8	3.3	2.5	2.8	1.0	0.8	-12.0 L	-7.0 L	0.7	0.9	5.5	1.30	14.0	-710.0
Naroff Economic Advisors*	1.2	1.5	2.7	0.8	0.6	1.0	0.9	0.4	12.0	0.6	1.7	9.1	1.23	16.3	-952.0
Georgia State University*	0.9 L	2.5 H	3.5	2.0	-4.7 L	-1.1	1.6	-4.6	38.1	0.0 L	1.5	10.3	0.96 L	10.8 L	-603.6 H
MacroFin Analytics & Rutgers Bus School	0.9 L	1.5	2.4	1.7	-2.2	1.5	0.7 L	2.0	9.5	0.2	1.1	6.7	1.11	15.5	-893.8
Societe Generale	0.9 L	1.2	2.1 L	1.6	na	1.0	1.4	-0.4	5.0	0.1	1.5	7.3	1.25	15.2	-1000.0
2021 Consensus: April Avg.	**3.8**	**1.5**	**5.4**	**1.7**	**3.0**	**2.0**	**4.1**	**3.0**	**14.0**	**0.3**	**1.2**	**7.2**	**1.25**	**15.4**	**-872.9**
Top 10 Avg	6.4	2.1	8.1	2.5	8.4	4.5	6.9	8.7	30.6	0.6	1.7	10.3	1.44	16.7	-694.1
Bottom 10 Avg	1.5	1.0	3.0	0.9	-1.0	0.0	1.3	-2.8	1.9	0.1	0.9	4.7	1.06	13.5	-1027.1
March Avg	2.0	2.0	4.0	2.1	1.6	1.9	2.0	2.9	4.0	1.1	1.8	3.7	1.37	16.5	-985.2
Number of Forecasts Changed From a Month Ago															
Down	7	32	9	28	10	21	5	20	3	32	29	0	29	23	8
Same	1	5	1	4	1	1	2	1	3	2	3	0	3	4	0
Up	37	6	34	13	28	17	37	23	23	4	6	45	7	10	35
April Median	3.6	1.5	5.2	1.7	2.2	1.7	3.7	2.9	9.8	0.2	1.2	6.8	1.26	15.8	-890.3
April Diffusion Index	83%	20%	78%	33%	73%	45%	86%	53%	84%	13%	20%	100%	22%	32%	81%

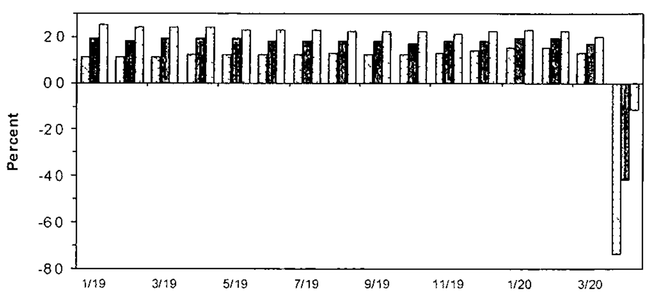
***Former winner of annual Lawrence R. Klein Award for Blue Chip Forecast Accuracy. **Denotes two-time winner.**

BASIC DATA SOURCES [1]Gross Domestic Product (GDP), chained 2012$, National Income and Product Accounts (NIPA), Bureau of Economic Analysis (BEA), [2]GDP Chained Price Index, NIPA, BEA, [3]GDP, current dollars, NIPA, BEA, [4]Consumer Price Index-All Urban Consumers, Bureau of Labor Statistics (BLS), [5]Total Industrial Production, Federal Reserve Board (FRB), [6]Disposable Personal Income, 2012$, NIPA, BEA, [7]Personal Consumption Expenditures, 2012$, NIPA, BEA, [8]Non-residential Fixed Investment, 2012$, NIPA, BEA, [9]Corporate Profits Before Taxes, current dollars, with inventory valuation and capital consumption adjustments, NIPA, BEA, [10]Treasury Bill Rate, 3-month, secondary market, bank discount basis, FRB, [11]Treasury note yield, 10-year, constant maturity basis, FRB, [12]Unemployment Rate, civilian work force, BLS, [13]Housing Starts, Bureau of Census, [14]Total U S Auto and Light Truck Sales (includes imports), BEA, [15]Net Exports of Goods and Services, 2012$, NIPA, BEA

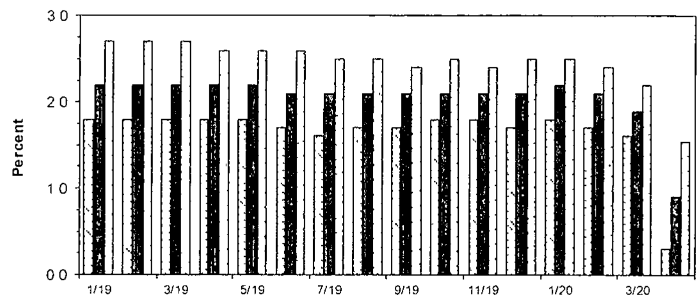
Previous Consensus Forecasts

Consensus Forecast For 2020	Real GDP Chained	GDP Price Index	Nominal GDP (Cur $)	Consumer Price Index	Indust Prod (Total)	Real Dis Pers Income	Real Personal Cons Exp	Real Non-Res Fix Inv	Corp Profits (Cur $)	Treas Bills 3-mo	Treas Notes 10-Year	Unempl Rate (Civ)	Housing Starts (Mil)	Auto/Truck Sales (Mil)	Real Net Exports
January 2019 Consensus	1.9	2.2	4.1	2.2	1.8	2.1	2.1	3.0	2.2	2.8	3.2	3.7	1.29	16.4	-1030.7
February 2019 Consensus	1.8	2.2	4.0	2.2	1.7	2.0	2.0	2.9	2.3	2.7	3.0	3.7	1.27	16.4	-1030.2
March 2019 Consensus	1.9	2.2	4.0	2.2	1.8	2.0	2.0	3.0	2.5	2.7	3.0	3.7	1.26	16.4	-1021.3
April 2019 Consensus	1.9	2.2	4.1	2.2	1.7	2.1	2.1	3.1	2.5	2.5	2.8	3.7	1.27	16.4	-1004.3
May 2019 Consensus	1.9	2.1	4.0	2.2	1.6	2.1	2.1	3.2	2.7	2.4	2.8	3.6	1.26	16.4	-969.7
June 2019 Consensus	1.8	2.1	4.0	2.1	1.4	2.1	2.1	2.8	2.3	2.2	2.6	3.6	1.26	16.4	-950.1
July 2019 Consensus	1.8	2.1	3.9	2.1	1.3	2.0	2.1	2.6	2.4	1.9	2.3	3.7	1.27	16.4	-945.2
August 2019 Consensus	1.8	2.1	4.0	2.1	1.1	2.1	2.2	2.4	2.5	1.8	2.1	3.6	1.27	16.4	-999.5
September 2019 Consensus	1.8	2.1	3.9	2.1	0.8	2.0	2.2	1.8	2.2	1.6	1.9	3.7	1.26	16.4	-1000.3
October 2019 Consensus	1.7	2.1	3.9	2.1	0.8	2.0	2.2	1.5	2.0	1.5	1.8	3.7	1.27	16.4	-1008.9
November 2019 Consensus	1.8	2.1	3.8	2.1	0.7	2.1	2.2	1.2	1.8	1.5	1.8	3.7	1.27	16.4	-1005.7
December 2019 Consensus	1.8	2.0	3.8	2.1	0.7	2.0	2.3	1.1	2.6	1.5	1.9	3.7	1.28	16.5	-997.3
January 2020 Consensus	1.9	2.0	3.9	2.2	0.5	2.1	2.4	1.1	2.5	1.5	1.9	3.6	1.31	16.6	-979.4
February 2020 Consensus	1.9	1.9	3.8	2.1	0.4	2.1	2.3	0.7	2.2	1.5	1.9	3.6	1.34	16.6	-959.0
March 2020 Consensus	1.7	1.8	3.5	1.9	0.1	2.0	2.0	0.0	1.2	1.1	1.4	3.6	1.38	16.6	-939.2
April 2020 Consensus	-4.1	1.3	-3.0	0.9	-7.3	-0.3	-4.4	-9.1	-14.6	0.3	1.0	8.8	1.16	13.1	-786.2
Difference From Jan 2019 Forecast	-6.0	-0.9	-7.1	-1.3	-9.1	-2.4	-6.5	-12.1	-16.8	-2.5	-2.2	5.1	-0.1	-3.3	244.5
Forecast High	1.9	2.2	4.1	2.2	1.8	2.1	2.4	3.2	2.7	2.8	3.2	8.8	1.4	16.6	-786.2
Forecast Low	-4.1	1.3	-3.0	0.9	-7.3	-0.3	-4.4	-9.1	-14.6	0.3	1.0	3.6	1.2	13.1	-1030.7
Consensus Forecast For 2021	Real GDP Chained	GDP Price Index	Nominal GDP (Cur $)	Consumer Price Index	Indust Prod (Total)	Real Dis Pers Income	Real Personal Cons Exp	Real Non-Res Fix Inv	Corp Profits (Cur $)	Treas Bills 3-mo	Treas Notes 10-Year	Unempl Rate (Civ)	Housing Starts (Mil)	Auto/Truck Sales (Mil)	Real Net Exports
January 2020 Consensus	1.9	2.0	4.0	2.0	1.4	2.0	2.1	2.6	3.8	1.4	2.1	3.7	1.32	16.5	-1018.2
February 2020 Consensus	2.0	2.0	4.0	2.0	1.5	2.0	2.1	2.8	3.6	1.4	2.0	3.7	1.35	16.4	-1001.7
March 2020 Consensus	2.0	2.0	4.0	2.1	1.6	1.9	2.0	2.9	4.0	1.1	1.8	3.7	1.37	16.5	-985.2
April 2020 Consensus	3.8	1.5	5.4	1.7	3.0	2.0	4.1	3.0	14.0	0.3	1.2	7.2	1.25	15.4	-872.9
Difference From Jan 2020 Forecast	1.9	-0.5	1.4	-0.3	1.6	0.0	2.0	0.4	10.2	-1.1	-0.9	3.5	-0.1	-1.1	145.3
Forecast High	3.8	2.0	5.4	2.1	3.0	2.0	4.1	3.0	14.0	1.4	2.1	7.2	1.4	16.5	-872.9
Forecast Low	1.9	1.5	4.0	1.7	1.4	1.9	2.0	2.6	3.6	0.3	1.2	3.7	1.3	15.4	-1018.2

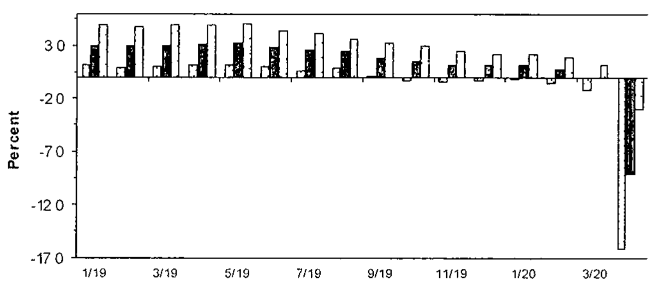
Bottom 10, Consensus, and Top 10 Forecasts of Y/Y % Change in Real GDP in 2020



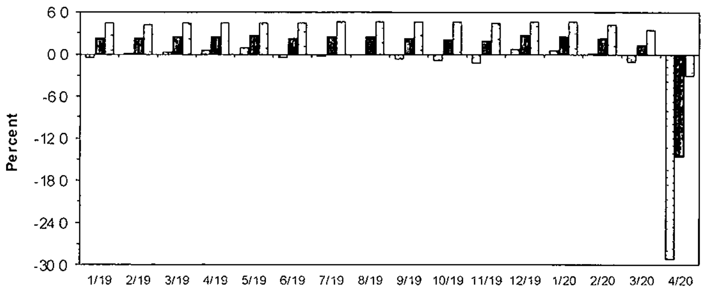
Bottom 10, Consensus, and Top 10 Forecasts of Y/Y % Change in Consumer Price Index in 2020



Bottom 10, Consensus, and Top 10 Forecasts of Y/Y %Chg in Real Nonresidential Fixed Investment in 2020



Bottom 10, Consensus, and Top 10 Forecasts of Y/Y % Change in Corporate Profits in 2020



3. Blue Chip Consensus: Percent Change From Prior Quarter At Annual Rate And Averages For Quarter.*

Actuals[1]	Real GDP	GDP Price Index	CPI	Producer Price Index	Total Industrial Production	Disposable Personal Income	Personal Consump. Expend.	Unemploy-ment Rate	3-Mo. Treas. Bills	10-Yr. Treas. Notes	Change in Business Inventories	Real Net Exports
	% Change From Prior Quarter At Annual Rate							Average For Quarter				
2019 1Q	3.1	1.1	0.9	-0.3	-1.9	4.5	1.1	3.9	2.4	2.7	116.0	-944.0
2Q	2.0	2.4	3.0	3.3	-2.3	1.5	4.6	3.6	2.4	2.3	69.4	-980.7
3Q	2.1	1.8	1.8	0.7	1.1	2.1	3.2	3.6	2.0	1.8	69.4	-990.1
4Q	2.1	1.3	2.4	0.8	0.2	1.6	1.8	3.5	1.6	1.8	13.1	-900.7
Blue Chip Forecasts	% Change From Prior Quarter At Annual Rate							Average For Quarter				
2020 1Q Consensus	**-3.8**	**1.4**	**1.4**	**-0.7**	**-5.3**	**1.0**	**-4.5**	**3.8**	**1.0**	**1.3**	**-28.8**	**-867.4**
Top 10 Avg.	-0.4	2.1	1.9	1.1	-1.1	2.8	0.1	3.8	1.3	1.5	6.7	-816.7
Bot. 10 Avg.	-7.5	0.8	0.8	-2.7	-10.3	-1.9	-9.5	3.6	0.6	0.9	-73.8	-924.0
2Q Consensus	**-24.5**	**0.4**	**-2.7**	**-5.9**	**-27.7**	**-3.1**	**-27.8**	**11.5**	**0.1**	**0.8**	**-103.9**	**-749.9**
Top 10 Avg.	-12.9	1.9	0.6	-1.0	-7.1	15.7	-14.1	15.6	0.2	1.0	16.7	-499.3
Bot. 10 Avg.	-36.9	-1.8	-5.9	-12.1	-47.1	-21.4	-41.0	7.3	0.0	0.6	-271.9	-929.9
3Q Consensus	**7.4**	**1.4**	**1.7**	**1.8**	**4.0**	**1.5**	**12.1**	**10.4**	**0.1**	**0.8**	**-132.5**	**-728.1**
Top 10 Avg.	22.8	2.6	3.7	6.4	33.4	12.0	28.4	15.6	0.3	1.1	50.6	-389.5
Bot. 10 Avg.	-5.5	0.4	-0.1	-2.6	-16.9	-8.7	-0.6	5.9	0.0	0.6	-350.7	-967.6
4Q Consensus	**7.9**	**1.6**	**1.9**	**3.4**	**5.9**	**1.5**	**9.3**	**9.1**	**0.1**	**0.9**	**-116.4**	**-772.1**
Top 10 Avg.	18.4	2.4	3.0	7.4	22.9	7.7	19.6	13.7	0.3	1.3	49.9	-485.9
Bot. 10 Avg.	2.0	0.7	0.6	0.4	-7.3	-5.6	2.3	5.4	0.0	0.7	-389.6	-991.5
2021 1Q Consensus	**6.9**	**1.7**	**2.0**	**2.6**	**7.2**	**2.6**	**6.0**	**8.1**	**0.2**	**1.1**	**-26.8**	**-808.9**
Top 10 Avg.	14.0	2.5	3.0	4.3	14.9	5.5	12.0	12.0	0.4	1.5	73.7	-562.3
Bot. 10 Avg.	2.0	0.9	1.1	1.2	0.8	-0.2	1.7	5.0	0.1	0.8	-176.2	-1010.0
2Q Consensus	**5.2**	**1.8**	**2.1**	**2.5**	**6.2**	**2.9**	**5.1**	**7.4**	**0.2**	**1.2**	**27.5**	**-852.2**
Top 10 Avg.	10.9	2.4	3.1	4.3	13.0	6.0	10.1	10.7	0.5	1.6	95.7	-644.0
Bot. 10 Avg.	2.2	1.2	1.3	0.9	1.4	0.1	2.3	4.6	0.1	0.8	-46.7	-1025.2
3Q Consensus	**4.0**	**1.7**	**2.0**	**2.6**	**4.6**	**2.7**	**4.2**	**6.7**	**0.3**	**1.3**	**59.4**	**-890.6**
Top 10 Avg.	7.8	2.2	2.9	3.8	9.6	5.0	8.1	9.7	0.6	1.8	132.0	-707.0
Bot. 10 Avg.	1.4	1.0	1.2	1.7	1.2	0.9	2.0	4.4	0.1	0.9	-1.2	-1036.9
4Q Consensus	**3.3**	**1.7**	**2.0**	**2.2**	**3.8**	**2.3**	**3.6**	**6.2**	**0.3**	**1.4**	**75.4**	**-923.9**
Top 10 Avg.	6.1	2.3	2.7	3.0	6.8	3.7	6.4	8.8	0.8	2.0	163.0	-750.0
Bot. 10 Avg.	1.5	0.9	1.3	1.5	1.7	1.0	2.0	4.2	0.1	0.9	16.4	-1073.6

4. Blue Chip Consensus: Quarterly Annualized Values And Percent Change From Same Quarter In Prior Year.*

Real Gross Domestic Product

	Billions of Chained 2012$ (SAAR)			% Change From Same Quarter In Prior Year		
	Actual	Forecast		Actual	Forecast	
Quarter	2019	2020	2021	2019	2020	2021
1Q	18927.3	**19037.6**	**18714.8**	2.7	**0.6**	**-1.7**
2Q	19021.9	**17743.9**	**18954.9**	2.3	**-6.7**	**6.8**
3Q	19121.1	**18061.6**	**19142.6**	2.1	**-5.5**	**6.0**
4Q	19222.0	**18406.2**	**19300.4**	2.3	**-4.2**	**4.9**

GDP Chained Price Index

	Index 2012 = 100 (SAAR)			% Change From Same Quarter In Prior Year		
	Actual	Forecast		Actual	Forecast	
Quarter	2019	2020	2021	2019	2020	2021
1Q	111.5	**113.4**	**114.9**	2.0	**1.7**	**1.3**
2Q	112.2	**113.5**	**115.4**	1.8	**1.2**	**1.6**
3Q	112.7	**113.9**	**115.9**	1.7	**1.1**	**1.7**
4Q	113.0	**114.4**	**116.3**	1.6	**1.2**	**1.7**

Total Industrial Production

	Index 2012 = 100 (SAAR)			% Change From Same Quarter In Prior Year		
	Actual	Forecast		Actual	Forecast	
Quarter	2019	2020	2021	2019	2020	2021
1Q	109.8	**108.0**	**103.8**	2.9	**-1.6**	**-3.9**
2Q	109.2	**99.6**	**105.4**	1.2	**-8.7**	**5.8**
3Q	109.5	**100.6**	**106.6**	0.2	**-8.1**	**6.0**
4Q	109.5	**102.0**	**107.6**	-0.7	**-6.8**	**5.5**

Consumer Price Index

	Index 1982-1984 = 100 (SAAR)			% Change From Same Quarter In Prior Year		
	Actual	Forecast		Actual	Forecast	
Quarter	2019	2020	2021	2019	2020	2021
1Q	253.3	**258.7**	**260.5**	1.6	**2.2**	**0.7**
2Q	255.2	**256.9**	**261.9**	1.8	**0.7**	**1.9**
3Q	256.3	**258.0**	**263.2**	1.8	**0.7**	**2.0**
4Q	257.8	**259.2**	**264.5**	2.0	**0.5**	**2.0**

***See explanatory notes on inside of back cover for details of how these data are compiled.**

BLUE CHIP INTERNATIONAL CONSENSUS FORECASTS

	ANNUAL DATA						END OF YEAR			
	Real Economic Growth % Change GDP		Inflation % Change Consumer Prices		Current Account In Billions Of U.S Dollars		Exchange Rate Against U S $*		Interest Rates 3-Month	
CANADA	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-3.7**	**3.5**	**1.1**	**1.9**	**-42.4**	**-34.3**	**1.42**	**1.37**	**0.47**	**0.66**
Top 3 Avg	-2.4	6.9	1.8	2.5	-33.7	-23.6	1.49	1.45	0.72	0.99
Bottom 3 Avg	-5.3	0.6	0.5	1.4	-50.2	-43.6	1.38	1.30	0.22	0.33
Last Month Avg	1.4	1.7	1.9	2.0	-32.2	-30.2	1.32	1.29	1.43	1.52
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	2.0	1.6	2.3	1.9	-43.0	-34.2	1.41	1.34	1.12	1.88
MEXICO	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-4.6**	**2.0**	**3.5**	**3.3**	**-8.9**	**-10.3**	**22.38**	**21.20**	**5.79**	**5.64**
Top 3 Avg	-2.2	3.5	4.1	3.9	-0.4	1.1	25.43	24.23	6.15	6.13
Bottom 3 Avg	-7.2	0.4	2.9	2.8	-15.7	-19.8	19.83	19.26	5.42	5.19
Last Month Avg	0.8	1.5	3.4	3.5	-15.1	-17.0	19.64	19.54	6.32	6.04
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	2.1	-0.1	4.9	3.6	-23.0	-2.4	24.57	19.09	7.43	8.36
JAPAN	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-2.8**	**1.6**	**-0.1**	**0.4**	**171.4**	**173.5**	**108.3**	**109.5**	**-0.04**	**-0.03**
Top 3 Avg	-1.3	3.5	0.5	1.0	187.0	182.6	114.8	117.4	0.01	0.02
Bottom 3 Avg	-4.7	0.4	-0.6	0.0	154.7	164.4	103.4	103.5	-0.09	-0.08
Last Month Avg	0.0	1.0	0.6	0.6	170.6	165.8	108.6	109.1	-0.10	-0.05
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	0.3	0.7	1.0	0.5	176.6	184.3	108.5	111.8	-0.02	-0.06
UNITED KINGDOM	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-4.5**	**3.6**	**0.9**	**1.3**	**-93.7**	**-112.9**	**1.25**	**1.36**	**0.31**	**0.36**
Top 3 Avg	-2.1	6.9	1.3	1.7	-53.8	-80.0	1.29	1.46	0.53	0.57
Bottom 3 Avg	-7.1	0.9	0.4	0.8	-137.0	-145.8	1.18	1.30	0.08	0.15
Last Month Avg	0.9	1.4	1.6	1.8	-99.4	-111.3	1.32	1.35	0.59	0.73
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	1.3	1.4	2.5	1.8	-110.2	-106.9	1.23	1.30	0.64	0.82
SOUTH KOREA	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-0.7**	**2.9**	**0.5**	**1.1**	**71.7**	**74.6**	**1217**	**1157**	**0.80**	**3.63**
Top 3 Avg	0.8	4.0	1.1	1.6	85.7	92.8	1258	1176	0.90	4.67
Bottom 3 Avg	-3.2	2.1	-0.3	0.7	60.3	62.4	1179	1133	0.74	0.84
Last Month Avg	1.8	2.4	1.1	1.4	55.8	57.3	1176	1151	0.99	1.09
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	2.7	2.0	1.5	0.4	77.5	60.0	1231	1136	1.15	1.85
GERMANY	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-4.9**	**4.3**	**0.8**	**1.3**	**237.1**	**252.9**	**1.10**	**1.18**	**-0.49**	**-0.55**
Top 3 Avg	-3.0	6.9	1.3	1.7	258.9	268.1	1.16	1.29	-0.36	-0.40
Bottom 3 Avg	-7.1	1.8	0.2	0.6	215.2	237.7	1.06	1.10	-0.62	-0.70
Last Month Avg	0.6	1.1	1.4	1.6	258.6	254.9	1.13	1.16	-0.51	-0.44
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	1.5	0.6	1.9	1.4	293.2	274.8	1.08	1.12	-0.34	-0.31
TAIWAN	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**0.1**	**2.8**	**0.1**	**1.0**	**69.9**	**71.2**	**30.40**	**29.84**	**0.56**	**0.66**
Top 3 Avg	1.2	3.6	0.4	1.3	76.1	80.0	31.08	30.30	0.64	0.78
Bottom 3 Avg	-1.0	2.1	-0.3	0.6	63.6	62.0	29.93	29.38	0.41	0.55
Last Month Avg	2.1	2.5	0.9	1.3	72.6	72.4	30.18	29.79	0.51	0.59
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	2.7	2.7	1.3	0.6	70.8	64.4	30.28	30.81	0.48	0.66
NETHERLANDS	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-3.1**	**3.4**	**0.8**	**1.2**	**71.2**	**75.2**	**1.10**	**1.18**	**-0.49**	**-0.55**
Top 3 Avg	-2.0	4.5	1.3	1.7	82.2	86.5	1.16	1.29	-0.36	-0.40
Bottom 3 Avg	-4.2	2.2	0.3	0.7	61.9	60.1	1.06	1.10	-0.62	-0.70
Last Month Avg	1.4	1.5	1.5	1.6	79.0	77.9	1.13	1.16	-0.51	-0.44
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	2.5	1.8	1.6	2.7	99.1	92.8	1.08	1.12	-0.34	-0.31

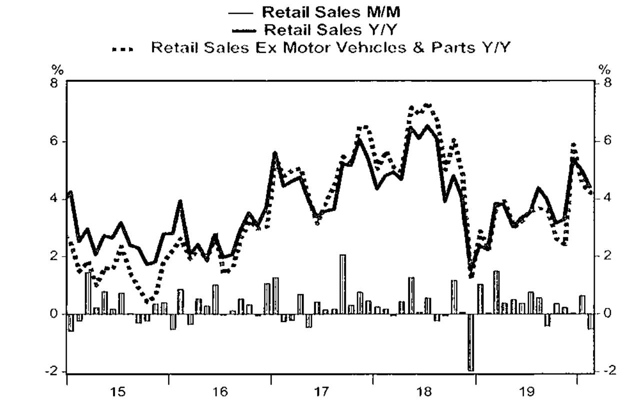
BLUE CHIP INTERNATIONAL CONSENSUS FORECASTS

	ANNUAL DATA						END OF YEAR			
	Real Economic Growth % Change GDP		Inflation % Change Consumer Prices		Current Account In Billions Of U.S Dollars		Exchange Rate Against U.S $		Interest Rates 3-Month	
RUSSIA	2020	2021	2020	2021	2020	2021	2020	2021	2020	2021
April 2020 Consensus	**-2.5**	**2.7**	**4.2**	**4.3**	**11.2**	**24.1**	**72.71**	**67.33**	**6.15**	**5.87**
Top 3 Avg	0 0	5 9	5 9	6 8	41 0	78 8	78 07	70 13	6 65	6 31
Bottom 3 Avg	-5 3	-0 1	2 9	2 5	-15 9	-23 3	67 10	65 17	5 71	5 37
Last Month Avg	1 7	1 8	3 3	3 7	53 7	64 6	63 63	62 54	5 90	5 58
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	2 5	1 3	2 9	4 5	113 7	64 6	77 06	65 28	6 38	7 68
FRANCE	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-4.9**	**4.0**	**0.6**	**1.2**	**-12.4**	**-17.4**	**1.10**	**1.18**	**-0.49**	**-0.55**
Top 3 Avg	-2 5	6 5	1 2	1 5	-5 0	-9 8	1 16	1 29	-0 36	-0 40
Bottom 3 Avg	-6 8	1 0	0 0	0 7	-19 8	-25 1	1 06	1 10	-0 62	-0 70
Last Month Avg	0 9	1 3	1 3	1 4	-2 6	-2 4	1 13	1 16	-0 51	-0 44
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	1 7	1 3	2 1	1 3	-18 9	-18 5	1 08	1 12	-0 34	-0 31
BRAZIL	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-2.8**	**3.0**	**3.6**	**3.5**	**-43.7**	**-51.2**	**4.74**	**4.34**	**3.58**	**4.23**
Top 3 Avg	-0 7	4 2	4 4	3 8	-33 7	-42 1	5 18	4 64	3 77	4 50
Bottom 3 Avg	-4 7	1 3	3 0	3 2	-52 8	-58 9	4 20	4 08	3 38	3 90
Last Month Avg	1 8	2 3	3 8	3 7	-54 6	-56 5	4 19	4 02	4 29	4 88
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	1 3	1 1	3 7	3 7	-41 5	-49 5	5 30	3 86	3 34	6 38
HONG KONG	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-3.7**	**3.4**	**1.2**	**1.9**	**16.4**	**16.7**	**7.79**	**7.79**	**1.33**	**1.38**
Top 3 Avg	-1 7	5 0	2 3	2 6	23 5	26 1	7 82	7 82	1 47	1 54
Bottom 3 Avg	-6 2	1 8	0 0	0 6	7 8	8 0	7 76	7 76	1 04	1 07
Last Month Avg	-0 6	2 3	1 9	2 2	14 9	15 9	7 81	7 80	1 25	1 31
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	2 9	-1 2	2 4	2 9	13 5	22 7	7 75	7 85	1 95	1 77
INDIA	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**1.8**	**6.3**	**4.3**	**4.0**	**-21.1**	**-39.4**	**74.60**	**73.10**	**4.56**	**4.60**
Top 3 Avg	4 3	8 4	5 2	4 7	6 9	-2 4	77 27	76 40	4 89	4 94
Bottom 3 Avg	-1 2	4 2	3 3	3 4	-52 2	-78 4	72 60	70 67	4 29	4 30
Last Month Avg	5 7	6 1	4 4	4 2	-47 9	-58 3	72 10	71 39	4 91	4 83
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	6 8	5 3	3 9	3 7	-65 6	-26 9	76 17	69 23	4 29	6 21
CHINA	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**1.4**	**7.7**	**3.4**	**1.9**	**149.2**	**123.4**	**7.03**	**6.95**	**2.30**	**2.62**
Top 3 Avg	3 4	9 1	4 6	3 1	258 8	215 3	7 13	7 11	2 33	2 73
Bottom 3 Avg	-0 5	6 4	2 3	0 7	33 3	6 6	6 96	6 81	2 27	2 43
Last Month Avg	5 2	6 1	3 3	2 1	86 5	78 5	6 99	6 91	2 24	2 30
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	6 7	6 1	2 1	2 9	25 5	141 3	7 09	6 72	1 84	2 76
AUSTRALIA	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-2.2**	**4.0**	**1.4**	**1.7**	**-9.5**	**-14.4**	**0.61**	**0.67**	**0.35**	**0.34**
Top 3 Avg	0 6	7 3	2 0	2 1	-1 1	-8 4	0 64	0 70	0 40	0 42
Bottom 3 Avg	-5 3	2 4	0 8	1 1	-17 1	-20 5	0 57	0 62	0 27	0 25
Last Month Avg	2 0	2 5	2 0	2 0	-4 5	-1 9	0 68	0 70	0 59	0 67
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	2 7	1 8	1 9	1 6	-29 3	7 1	0 60	0 71	0 90	1 87
EURO AREA	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
April 2020 Consensus	**-5.1**	**3.8**	**0.4**	**1.1**	**364.2**	**371.6**	**1.10**	**1.18**	**-0.49**	**-0.55**
Top 3 Avg	-2 8	6 5	0 8	1 5	383 9	398 3	1 16	1 29	-0 36	-0 40
Bottom 3 Avg	-7 3	0 8	-0 1	0 5	344 4	345 0	1 06	1 10	-0 62	-0 70
Last Month Avg	0 8	1 3	1 2	1 4	374 6	365 2	1 13	1 16	-0 51	-0 44
	2018	**2019**	**2018**	**2019**	**2018**	**2019**	**Latest**	**Year Ago**	**Latest**	**Year Ago**
Actual	1 9	1 2	1 8	1 2	425 7	357 7	1 08	1 12	-0 34	-0 31

Contributors to Blue Chip International Survey: ACIMA Private Wealth, US, Bank of America-Merrill Lynch, US, Barclays, US, BMO Capital Markets, US, The Conference Board, US, Economist Intelligence Unit, UK, FedEx Corporation, US, General Motors Corporation, US, Grupo de Economistas y Asociados, Mexico, US, IHS Markit, US, JPMorgan Chase, US, Moody's Analytics, US, Moody's Capital Markets, US, Nomura Securities, US, Northern Trust, US, Oxford Economics, US, S&P Global, US, UBS, US, Wells Fargo, US

Recent Developments:

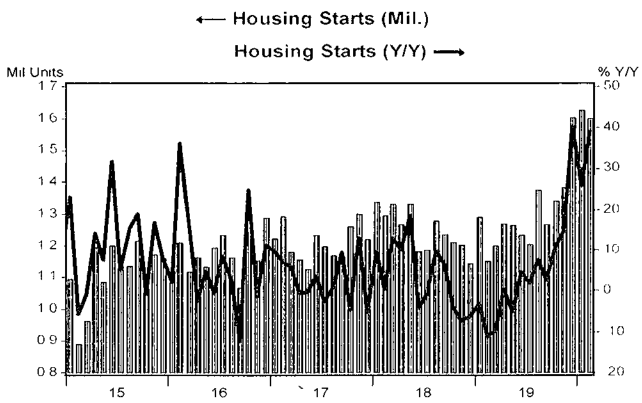
Retail Sales Fell 0.5% in February, the First Monthly Fall since September



Sources Census Bureau/Haver Analytics

Total retail sales fell 0.5% m/m (+4.3% y/y) in February, the first m/m fall since September, after an upwardly revised 0.6% gain in January. Excluding motor vehicles & parts, retail sales fell 0.4% (+4.2% y/y), the first m/m fall since November, after a 0.6% rise. Sales of motor vehicles & parts slid 0.9% (+4.9% y/y) versus a 0.8% gain. Nonauto sales excluding gasoline & building materials slipped 0 1% (+4.2% y/y) following a 0.4% rise. Building materials & garden equipment store sales slid 1.3% (+5.1% y/y), the first m/m slide since September. Furniture & home furnishing store sales fell 0.4% (+3.8% y/y) versus a 3.2% gain. Electronics & appliance store sales fell 1.4% (-1.0% y/y). Gasoline service station sales fell 2.8% (+2.7% y/y), the second straight m/m fall. Clothing & accessory store sales fell 1.2% (+1.4% y/y), the fourth m/m fall in five months. General merchandise store sales slipped 0.1% (2.5% y/y). However, nonstore retail sales rose 0 7% (7 5% y/y). In the nondiscretionary sales categories, food & beverage store sales ticked up 0.02% (4.0% y/y). Health & personal care store sales slipped 0.1% (+0.6% y/y). Restaurant & drinking establishment sales fell 0.5% (+5.2% y/y) ahead of COVID-19 impacts from social distancing.

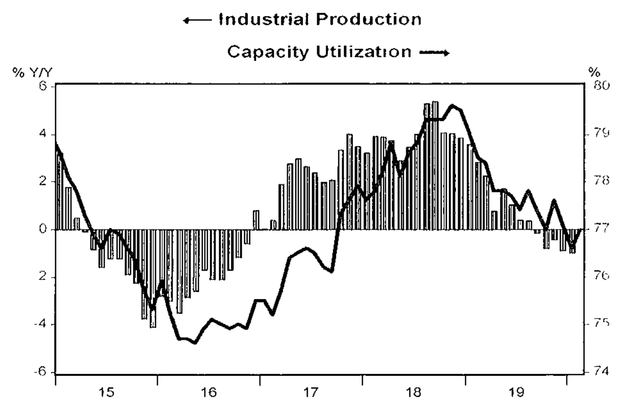
February Housing Starts Declined 1.5% to 1.599 Million AR



Source Census Bureau/Haver Analytics

Total housing starts fell 1.5% m/m (+39.2% y/y) in February, the first m/m fall since September, to 1.599 million (AR) after an upwardly revised 1.4% rise to 1.624 million in January. Single-family starts rose 6.7% (35.4% y/y) to 1.072 million, the highest level since June 2007, versus a 4.9% drop to 1.005 million. Multi-family starts fell 14.9% (+47.6% y/y) to 527,000, the lowest level since November, after a 13.8% gain to 619,000. Starts in the Northeast plunged 41.4% (+41.6% y/y) to 126,000, a three-month low, versus a 51 4% surge to 215,000. Starts in the West dropped 18.2% (+49.0% y/y) to 374,000 after a 10.4% gain to 457,000. To the upside, starts in the Midwest rebounded 16.7% (32.1% y/y) to 210,000 after a 24.4% drop to 180,000 Starts in the South rose 15.2% (36.8% y/y) to 889,000, the highest level since September 2006, after a 4.3% drop to 772,000. Building permits fell 6.3% (+12.8% y/y) to 1.452 million after a 9.2% rise to 1.550 million. Single-family permits rose 1.8% (23.5% y/y) to 1.005 million, the highest level since May 2007, on top of a 6.4% gain Multi-family permits dropped 20.6% (-5.5% y/y) to 447,000 versus a 14.4% rise

Industrial Production Rebounded 0.6% in February Led by a Rise in Utility Output

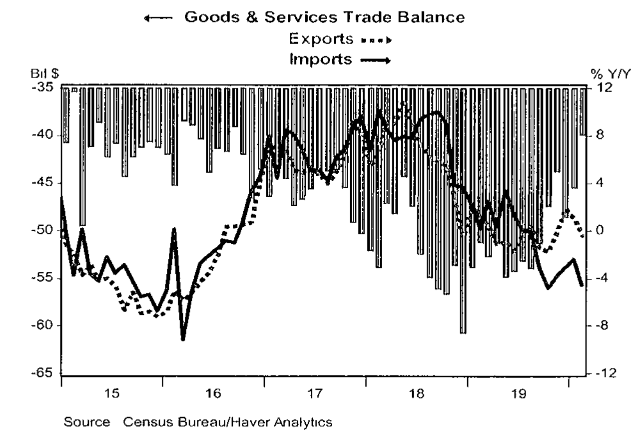


Source Federal Reserve Board/Haver Analytics

Total industrial production rose 0.6% m/m (0.0% y/y) in February, the first m/m rise since November, after a 0.5% drop in January (originally -0.3%). Manufacturing production ticked up 0.1% (-0.4% y/y) versus a 0.2% decline, with manufactured durable goods up 0.3% (-0.4% y/y) and manufactured nondurable goods down 0.1% (+0.1% y/y). The halt in 737 MAX production led to another 4.9% drop in aircraft. Utilities output rose 7.1% (0.4% y/y), the largest m/m gain since March 2017, after a 4.9% drop. Consumer goods output rose 1 7% (0.2% y/y) after a 1.1% decline, with durable consumer goods up 2 4% (1 9% y/y) and nondurable consumer goods up 1.5% (-0.3% y/y). Business equipment fell 0.4% (-3.7% y/y), the fifth m/m fall in six months, after a 3.0% drop. Construction supplies fell 0.4% (+2.0% y/y) versus a 1 4% gain Mining activity slid 1.5% (+2.1% y/y) following a 1.0% rise Materials production rose 0.2% (0.5% y/y) after a 0.1% uptick. Motor vehicles rose 3.5% (1.4% y/y), the third m/m rise in four months. Output of selected high-tech products fell 0.2% (+7.0% y/y), the first m/m fall since May, after a 0.6% gain. Capacity utilization rose to 77.0% from 76.6%. Manufacturing capacity utilization held steady at 75.0%.

Recent Developments:

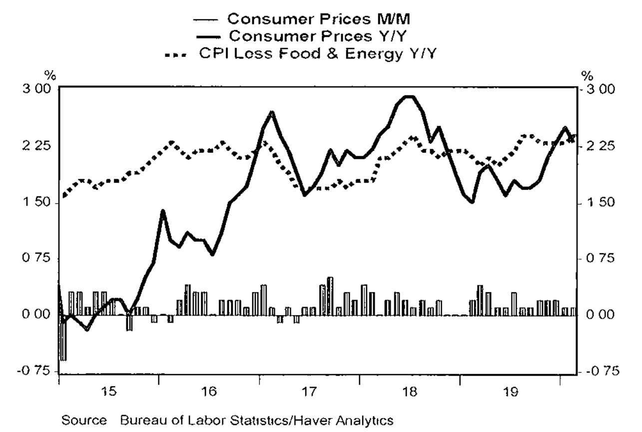
February Trade Deficit Narrowed to $39.93 Billion, the Smallest since September 2016



Source Census Bureau/Haver Analytics

The U.S. trade deficit in goods and services narrowed to $39.93 billion in February, the smallest shortfall since September 2016, from $45.48 billion in January. Exports fell 0.4% m/m (-0.4% y/y) after falling 0.6%. Imports slid 2.5% (-4.7% y/y), the fifth m/m slide in six months, after a 1.7% drop. The deficit in goods trade fell to $61.21 billion from $67.12 billion. Goods exports rose 0.7% (-1.5% y/y), led by rises of 5.3% (8.7% y/y) in other goods, 4.1% (-1.0% y/y) in autos, 1.6% (6.4% y/y) in industrial supplies, and 0.5% (-7.5% y/y) in capital goods. Imports of goods fell 2.4% (-5.8% y/y), led by drops of 6.7% (-9.4% y/y) in capital goods, 3.8% (-4.6% y/y) in industrial supplies, and 3.1% (+4.8% y/y) in foods, feeds & beverages. Petroleum imports fell 1.3% (+0.3% y/y). Nonpetroleum imports slid 2.6% (-6.3% y/y). The surplus on services trade slipped to $21.28 billion from $21.64 billion. Services exports fell 2.4% (+1.6% y/y). Services imports fell 2.7% (-0.1% y/y). The real (infl-adj.) goods trade deficit fell to $69.02 billion from $77.98 billion. The goods trade deficit with China narrowed to $19.71 billion, the smallest since November 2009. U.S. exports to China declined 3.5% (-18.4% y/y). Imports from China dropped 13.5% (-30.8% y/y).

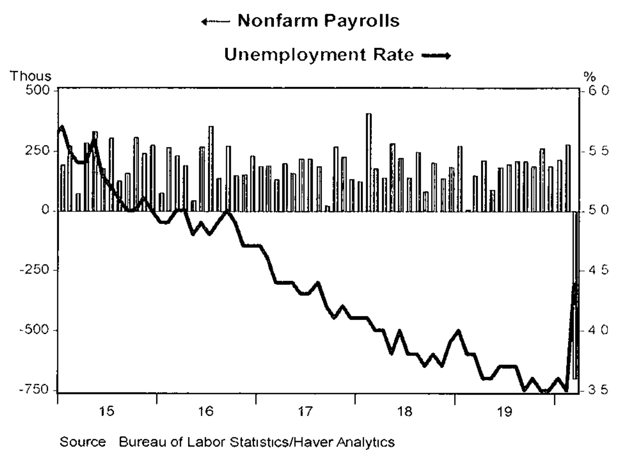
February CPI Ticked Up 0.1%; Core CPI Increased 0.2%



Source Bureau of Labor Statistics/Haver Analytics

Consumer prices ticked up 0.1% m/m in February, the same pace as in January, following three straight months of 0.2% gain. The y/y rate decelerated to 2.3% from 2.5%. The CPI less food & energy prices rose 0.2% for the second month. The core y/y rate rose to 2.4% from 2.3%. Energy prices fell 2.0% (+2.8% y/y) after a 0.7% decline, led by drops of 8.5% (-5.9% y/y) in fuel oil costs, 3.4% (+5.6% y/y) in gasoline prices, 0.9% (-2.0% y/y) in natural gas prices, and 0.1% (+0.6% y/y) in electricity costs. Goods prices less food & energy rose 0.2% (0.0% y/y) after two straight months of no change, led by rises of 0.6% (5.6% y/y) in tobacco prices, 0.4% (-0.9% y/y) in apparel costs, 0.4% (-1.3% y/y) in used car & truck prices, and 0.1% (0.4% y/y) in new vehicle prices. Medical care goods prices fell 0.6% (+1.8% y/y). Nonenergy services prices rose 0.2% (3.1% y/y) after a 0.3% rise. A 0.3% gain (3.3% y/y) in shelter prices reflected a 0.3% rise (3.8% y/y) in rents of primary residences and a 0.2% gain (3.3% y/y) in the owners' equivalent rent. Medical care services prices rose 0.3% (5.3% y/y) and transportation prices rose 0.3% (1.2% y/y). Food prices increased 0.4% (1.8% y/y).

March Nonfarm Payrolls Fell 701K Amid COVID-19 Pandemic; Jobless Rate Rose to 4.4% from 3.5%

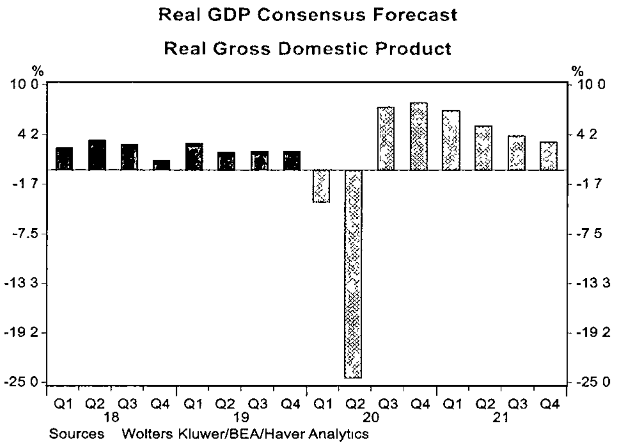


Source Bureau of Labor Statistics/Haver Analytics

Nonfarm payrolls dropped a more-than-expected 701,000 (+1.0% y/y) in March after revised gains of 275,000 in February (273K initially) and 214,000 in January (273K initially). The jobless rate rose to 4.4%, the highest level August 2017, from 3.5%. The total unemployment rate, incl. those marginally attached & working part-time for economic reasons, jumped to 8.7%, the highest level since March 2017, from 7.0%. Total private payrolls slid 713,000 (+1.0% y/y) after a 242,000 gain, with private services jobs down 659,000 (+1.1% y/y) and goods-producing jobs down 54,000 (+0.7% y/y). Construction sector jobs fell 29,000 (+2.2% y/y), the first m/m fall since November. Manufacturing employment fell 18,000 (+0.1% y/y), the third m/m fall in four months. Government sector employment rose 12,000 (1.0% y/y), the ninth m/m rise in 10 months. Average hourly earnings gained 0.4% after a 0.3% rise, raising the y/y rate to 3.1% from 3.0%. The length of the average workweek fell to 34.2 hours from 34.4 hours. In the household sector survey, the rise in the jobless rate to 4.4% reflected a 2,987,000 slump in employment and 1,633,000 drop in the labor force. The labor force participation rate fell to 62.7% from 63.4%.

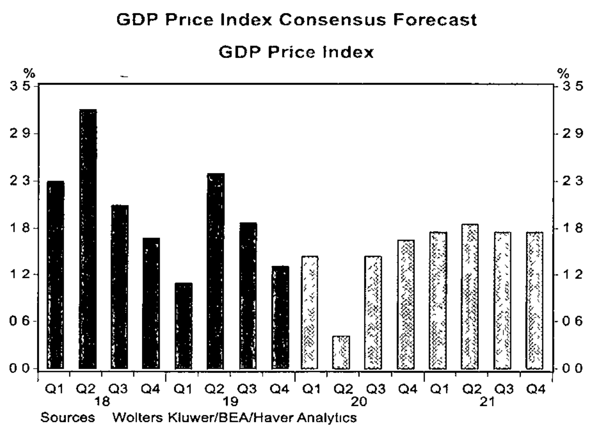
Quarterly U.S. Forecasts:

Real GDP



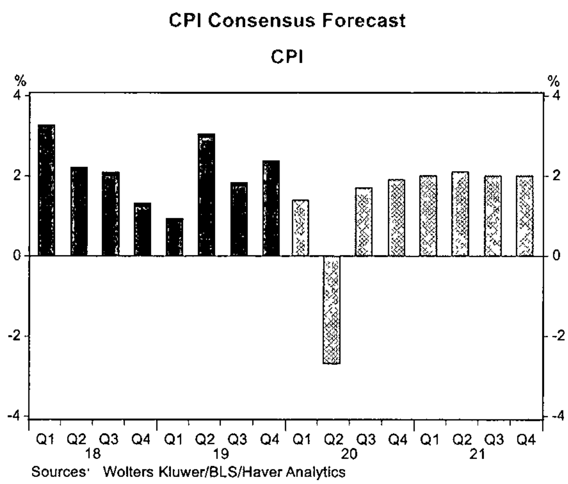
Real GDP growth for 2019 Q4 was not revised in the third estimate at 2.1% q/q saar. However, what happened in Q4 is now of little interest. Everyone is now trying to gauge what happened to the economy is 2020 Q1 and beyond. Activity data in January and February were generally upbeat, but that was before the coronavirus went "viral" in March. Large parts of the economy were shut down then and this likely delivered a severe blow to Q1 GDP. Unemployment claims soared to nearly 17 million in the three weeks to April 4, more than eight times larger than any other three-week period in the history of the series. The recently developed Lewis-Mertens-Stock Weekly Activity Index has collapsed since early March when it showed real GDP over the past year rising 1.4%. Its most recent reading (Apr 4) shows real GDP falling 6.6% y/y, a deeper decline than during the global financial crisis. PMIs cratered in March with the services-producing sector the most affected. Our panel looks for real GDP to fall 3.8% q/q saar in Q1 (+1.3% expected last month) and to collapse 24.5% in Q2 (+1.0% last month) before rebounding 7.4% in Q3 and 7.9% in Q4.

Chained GDP Price Index



After initially thinking that the outbreak of the coronavirus would primarily be a supply shock that pushes up inflation, forecasters are now also focusing on the disinflationary impact of the hit to demand from social distancing and business shutdowns. Further complicating the outlook is the drag on inflation from the recent collapse in petroleum prices. Notwithstanding the recent rebound, the price of WTI crude is down 56% since late February. Even before the spread of the coronavirus, inflation was rather benign. The GDP price index rose only 1.3% q/q saar in Q4 versus 1.8% in Q3 with the PCE price index, a major component of the GDP price index, up just 1.4% in Q4. In January and February, the PCE price index edged up just 0.1% m/m in each month, putting this index on course to rise 1.9% q/q in Q1. Last month, our forecast panel anticipated a 1.8% q/q saar rise in the GDP price index in Q1 and in the four quarters of 2020. Now, our panel looks for GDP inflation of only 1.4% in Q1, falling to 0.4% in Q2 and rebounding slightly to 1.4% and 1.6% in Q3 and Q4, respectively.

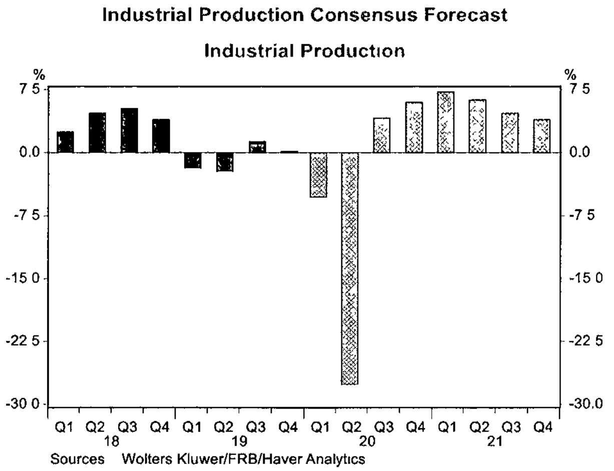
Consumer Price Index



Headline CPI inflation decelerated to 2.3% in February (0.1% m/m) from 2.5% in January. Energy prices fell 2.0% m/m (+2.8% y/y) while food prices rose 0.4% (1.8% y/y). Headline inflation is likely to slow meaningfully further in March as oil prices plummeted 42% (-49% y/y) to levels not seen since 2003 Seasonally adjusted gasoline prices dropped 11.2% in March and from a year ago. These price declines have continued into early April. Core inflation accelerated to 2.4% y/y in February (0.2% m/m) matching the cycle high. Non-energy service prices were up 3.1% y/y (0.2% m/m) with medical care service prices hitting a cycle high 5.3% y/y (0.3% m/m). Meanwhile, core commodity prices were unchanged year-on-year (0.2% m/m). It is difficult to ascertain the immediate impact of COVID-19 on core prices as shortages in some high demand goods and services are causing price spikes, while the drop in activity is causing disinflation or deflation in others. Over the medium-term the severity of the recession is likely to weigh on inflation. Blue Chip panelists expect prices to fall at a 2.7% saar in Q2 and then rebound at a 1 8% pace in H2. For 2021, they anticipate 2.0% Q4/Q4 inflation.

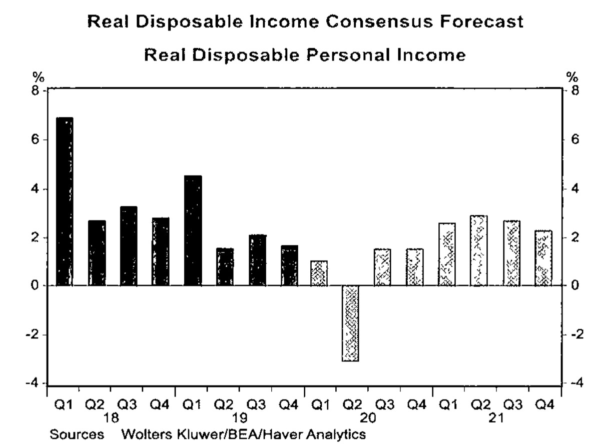
Quarterly U.S. Forecasts:

Industrial Production



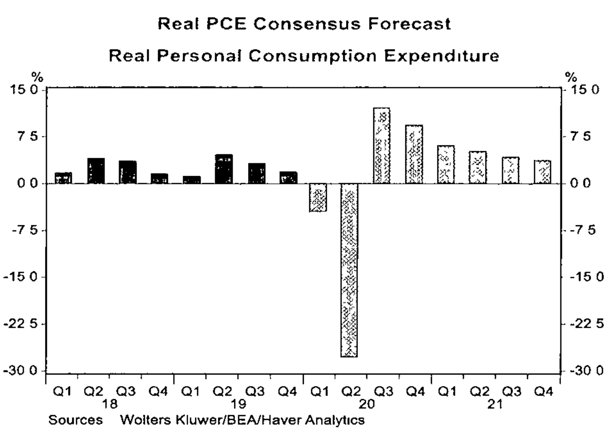
The green shoots that were emerging in U.S. and global manufacturing surveys have been mowed over by COVID-19, which our forecasters believe will cut 2020 U.S. and Global growth by 6.3 and 4.1%-point, respectively. Industrial production increased 0.6% in February (unchanged y/y), fired by a 7.1% jump in utility output (0.4% y/y), as a return to more seasonal weather in February increased utility demand. Manufacturing production edged up 0.1% m/m (-0.4% y/y) with gains in motor vehicle production offsetting continued declines in aerospace. Mining activity fell 1.5% m/m (+2.1% y/y). Surveys and high frequency data suggest industrial production collapsed in March. The manufacturing ISM index declined below the 50-growth mark to 49.1. That, however would have been meaningfully weaker had it not been for a deceiving jump in supplier delivery times, which usually suggests a healthy economy, but in this case was a sign of weakness. The production index fell to 47.7, while the new orders measure dropped to a 42.2, a level not seen since the Great Recession in 2009. Given this environment, IP is expected to drop 27.7% saar in Q2—the largest decline in 75 years. Output is then expected to rebound in H2 and into 2021.

Real Disposable Personal Income



Nominal disposable income grew 0.5% in February and was up 4.0% y/y. When adjusted for the 0.1% m/m rise in the PCE price index (1.8% y/y), real disposable income increased 0.4% in February and was up 2.2% y/y. Perhaps somewhat in response to COVID-19 concerns, consumption grew meaningfully more slowly than incomes in February: thus the saving rate jumped to 8.2%, the highest since early 2019. Incomes likely fell sharply in March as the 0.4% m/m rise in average hourly earnings was more than offset by the 1.1% drop in aggregate hours worked. The income declines in March are likely to be dwarfed by the April figures. Initial jobless claims totaled 16.8 million since mid-March. These data alone imply a more than 10%-point increase in the unemployment rate in April (March employment figures are based on a survey for the week ending March 14). The Blue Chip panel expects real disposable income will decline 3.1% saar in Q2, though this masks a significant divergence in forecasts with the Bottom 10 average at -21.4% and the Top 10 at +15.7%, apparently based on differences of opinion on the impact of the CARES Act on disposable incomes.

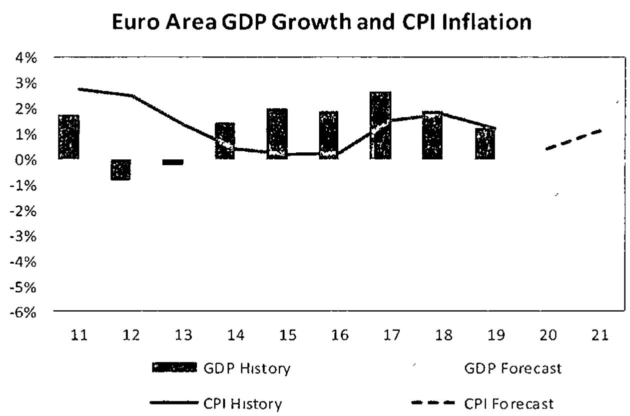
Real Personal Consumption Expenditures



Real personal consumption expenditure was slowing even before it was hit by the coronavirus. Real PCE grew only 1.8% q/q saar in 2019 Q4, down from 3.2% in Q3 and 4.6% in Q2. January/February data pointed to only 1-1/2% annual rate growth in Q1. But that was before coronavirus. March PCE figures have not been released but we know that motor vehicle sales collapsed in March, falling 5.4 million units at an annual rate to 11.4 million, the lowest monthly sales pace since 2010. Moreover, the early April reading on the University of Michigan consumer sentiment index cratered, falling 18 points, the largest monthly drop in the history of the series, to 71.0, its lowest reading since 2011. Johnson Redbook's weekly sales index slowed markedly during March—from up 9.1% in the week ended March 21 to just 5.3% in the week ended April 4. And the unprecedented surge in unemployment almost surely points to a blow to income. After expecting real PCE to grow 1 7% q/q in Q1 in last month's survey, the panel now looks for a 4.5% q/q decline followed by a 27.8% collapse in Q2 with rebounds of 12.1% and 9.3% in Q3 and Q4, respectively.

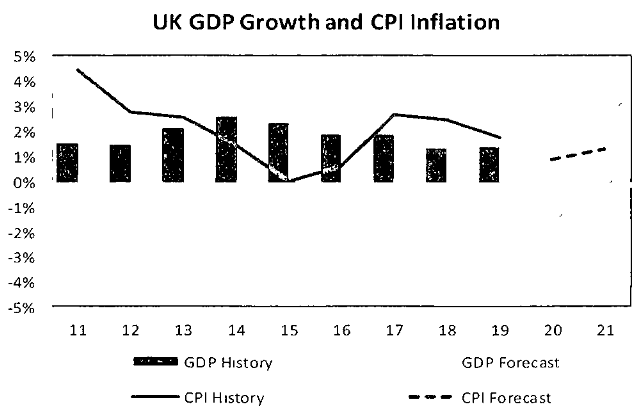
International Forecasts:

Euro Area



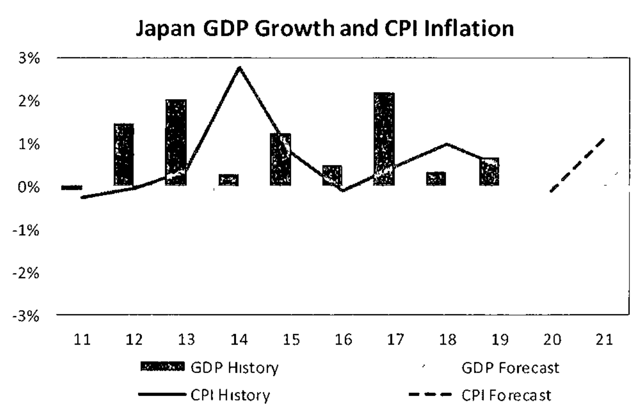
The economic news is already awful and will only get worse for the next few months Not much data have been released for March—just the PMIs—and they were horrific Led by Italy and Spain, the euro area Composite PMI plummeted to 29 7 from 51 6 in February This is the lowest reading in the history of the series and the monthly drop was four times larger than the previous largest monthly drop in late 2008 Harder data for March won't be released until late April or early May The ECB held an unscheduled meeting in March at which it decided on a colossal €750 billion bond-buying program, the Pandemic Emergency Purchase Programme, to extend through 2020 It will purchase a wide range of assets and debt of all European governments Also, the Economic Commission suspended all fiscal rules that constrained the size of fiscal deficits, enabling member states to spend whatever they must to fight the adverse impact of the virus Several governments, notably France, Italy and usually fiscally conservative Germany, have already announced substantial spending programs Our forecasters lowered their 2020 GDP forecast markedly to -5 1%% from +0 8% in March

UK



The economic costs of the coronavirus have started to emerge The March composite PMI tumbled to 36 0 from 53.0 in February, well below the boom-bust 50 level The Services PMI led the decline, dropping to 34 5 from 53 2 in February, while the Manufacturing PMI eased to 47 8 from 51 7 in February. The March CBI Industrial trends measuring the volume of output over the next 3 months dropped to -20 from 8 in February, and consumer confidence dropped to -34 from -7 in February Thus far, the Bank of England has cut the Bank rate to 0 1%, reduced capital requirements, raised its asset purchases by £200 bn, and agreed to directly finance government spending Through a Term Funding Scheme with incentives for SMEs, banks will have access to four-year funding at a rate close to the Bank rate Government action currently totals close to 3% of GDP, in the form of direct support focusing on job retention schemes, grants, tax cuts, and budget aid, and indirect support focusing on loans and guarantees exceeding £330 bn to help firms continue to operate The forecast panel estimates GDP to contract 4 5% this year, down from +0 9% last month

Japan



The Japanese economy was already teetering on the edge of a recession following a 2%-point increase in the consumption tax last October The widely spreading coronavirus has likely pushed it over the edge with the government having just declared a state of emergency with a month-long "voluntary" lockdown of three major prefectures, including Tokyo and Osaka The composite PMI dived from 47 0 in February to 36 2 in March, the second largest monthly decline in the history of the series The Bank of Japan has been somewhat reserved in its policy response, choosing mostly to address the financial market fallout It boosted its purchase of exchange-traded funds, commercial paper and corporate bonds and offered a new loan program at zero interest rate On the fiscal front, the ruling LDP party has just passed a massive ¥108 trillion package (about 20% of GDP) to help the economy However, the total figure includes only about ¥20 trillion of new government spending, the rest is loan guarantees, spending from earlier budgets, private-sector investment and private bank lending Our forecasters now look for Japanese GDP to decline 2 8% in 2020, down from flat in the March survey

Databank:

2020 Historical Data

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	0 6	-0 5										
Auto & Light Truck Sales (b)	16 91	16 74	11 37									
Personal Income (a, current $)	0 6	0 6										
Personal Consumption (a, current $)	0 2	0 2										
Consumer Credit (e)	3 5	6 4										
Consumer Sentiment (U of Mich)	99 8	101 0	89 1									
Household Employment (c)	-89	45	-2987									
Nonfarm Payroll Employment (c)	214	275	-701									
Unemployment Rate (%)	3 6	3 5	4 4									
Average Hourly Earnings (All, cur $)	28 43	28 51	28 62									
Average Workweek (All, hrs)	34 3	34 4	34 2									
Industrial Production (d)	-1 0	0 0										
Capacity Utilization (%)	76 6	77 0										
ISM Manufacturing Index (g)	50 9	50 1	49 1									
ISM Nonmanufacturing Index (g)	55 5	57 3	52 5									
Housing Starts (b)	1 624	1 599										
Housing Permits (b)	1 550	1 452										
New Home Sales (1-family, c)	800	765										
Construction Expenditures (a)	2 8	-1 3										
Consumer Price Index (nsa, d)	2 5	2 3										
CPI ex Food and Energy (nsa, d)	2 3	2 4										
Producer Price Index (nsa, d)	2 1	1 3										
Durable Goods Orders (a)	0 1	1 2										
Leading Economic Indicators (a)	0 7	0 1										
Balance of Trade & Services (f)	-45 5	-39 9										
Federal Funds Rate (%)	1 55	1 58	0 65									
3-Mo Treasury Bill Rate (%)	1 55	1 54	0 30									
10-Year Treasury Note Yield (%)	1 76	1 50	0 87									

2019 Historical Data

Monthly Indicator	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Retail and Food Service Sales (a)	1 0	0 1	1 5	0 4	0 5	0 4	0 7	0 6	-0 4	0 3	0 2	0 0
Auto & Light Truck Sales (b)	16 71	16 52	17 26	16 48	17 39	17 18	16 88	16 97	17 15	16 52	16 99	16 65
Personal Income (a, current $)	0 3	0 6	0 4	0 3	0 2	0 4	0 0	0 4	0 2	0 1	0 5	0 2
Personal Consumption (a, current $)	0 6	-0 1	1 0	0 7	0 4	0 3	0 5	0 3	0 2	0 3	0 3	0 4
Consumer Credit (e)	5 2	4 8	3 6	5 1	4 3	3 5	6 7	4 5	3 1	3 9	2 1	6 0
Consumer Sentiment (U of Mich)	91 2	93 8	98 4	97 2	100 0	98 2	98 4	89 8	93 2	95 5	96 8	99 3
Household Employment (c)	-198	239	-125	-45	148	304	198	549	403	246	-8	267
Nonfarm Payroll Employment (c)	269	1	147	210	85	182	194	207	208	185	261	184
Unemployment Rate (%)	4 0	3 8	3 8	3 6	3 6	3 7	3 7	3 7	3 5	3 6	3 5	3 5
Average Hourly Earnings (All, cur $)	27 58	27 69	27 76	27 81	27 87	27 96	28 05	28 16	28 16	28 24	28 34	28 37
Average Workweek (All, hrs)	34 5	34 4	34 5	34 4	34 4	34 4	34 3	34 4	34 4	34 4	34 3	34 3
Industrial Production (d)	3 6	2 7	2 3	0 7	1 7	1 0	0 4	0 3	-0 2	-0 8	-0 4	-0 9
Capacity Utilization (%)	79 0	78 5	78 4	77 8	77 8	77 7	77 4	77 8	77 4	77 0	77 6	77 1
ISM Manufacturing Index (g)	55 5	54 1	54 6	53 4	52 3	51 6	51 3	48 8	48 2	48 5	48 1	47 8
ISM Nonmanufacturing Index (g)	56 0	58 5	56 3	55 7	56 3	55 4	54 8	56 0	53 5	54 4	53 9	54 9
Housing Starts (b)	1 291	1 149	1 199	1 270	1 264	1 233	1 204	1 375	1 266	1 340	1 381	1 601
Housing Permits (b)	1 316	1 287	1 288	1 290	1 299	1 232	1 317	1 425	1 391	1 461	1 474	1 420
New Home Sales (1-family, c)	644	669	693	656	598	729	660	708	725	707	700	724
Construction Expenditures (a)	1 4	0 5	0 8	0 6	-0 7	-0 9	0 5	1 1	0 7	0 4	1 6	0 4
Consumer Price Index (sa, d)	1 6	1 5	1 9	2 0	1 8	1 6	1 8	1 7	1 7	1 8	2 1	2 3
CPI ex Food and Energy (sa, d)	2 2	2 1	2 0	2 1	2 0	2 1	2 2	2 4	2 4	2 3	2 3	2 3
Producer Price Index (nsa, d)	1 9	1 9	2 0	2 4	2 1	1 6	1 6	1 9	1 5	1 0	1 1	1 3
Durable Goods Orders (a)	0 5	-2 6	1 7	-2 8	-2 3	1 8	2 1	0 2	-1 5	0 2	-3 1	2 8
Leading Economic Indicators (a)	0 0	0 2	0 2	0 1	0 0	0 0	0 4	-0 2	-0 2	-0 2	0 1	-0 3
Balance of Trade & Services (f)	-53 8	-51 3	-52 7	-51 3	-54 8	-54 3	-53 2	-53 9	-51 3	-47 4	-43 8	-48 6
Federal Funds Rate (%)	2 40	2 40	2 41	2 42	2 39	2 38	2 40	2 13	2 04	1 83	1 55	1 55
3-Mo Treasury Bill Rate (%)	2 42	2 44	2 45	2 43	2 40	2 22	2 15	1 99	1 93	1 68	1 57	1 57
10-Year Treasury Note Yield (%)	2 71	2 68	2 57	2 53	2 40	2 07	2 06	1 63	1 70	1 71	1 81	1 86

(a) month-over-month % change; (b) millions, saar; (c) month-over-month change, thousands; (d) year-over-year % change; (e) annualized % change; (f) $ billions; (g) level. Most series are subject to frequent government revisions. Use with care.

Special Questions:

1. The U.S. Fed uses the PCE price indexes as its key measures of inflation What is your latest forecast for the total and core PCE price indexes, Q4 over Q4 each year?

	2020	2021
PCE	0.7%	1.6%
Core PCE	1.3%	1.6%

2. a. What is the probability of a U S. recession starting in:

Q1 2020	Q2 2020	Q3 2020
87.4%	38.2%	15 7%

b. How long will the recession last? 5.9 months

3. a What do you think the peak monthly unemployment rate for the U.S. will be in 2020? 14.0%

b. What do you think the U S. unemployment rate will be at the end of 2020? 9.2% at the end of 2021? 6.5%

4 How much do you estimate the impact of COVID-19 will be on annual real GDP growth?

	2020
China	-4.7%
U.S	-6.3%
Euro area	-5.1%
Japan	-3.3%
World	-4.1%

5. Did your COVID-adjusted U.S GDP growth projection for 2020 change after the pandemic relief bill was passed?

Yes	No
52%	48%

If yes, by how much did it change? 2 3%

6. What specific month will economic activity be the weakest in 2020?

March 2020	April 2020	May 2020	June 2020	Later than June
0%	76%	13%	5%	5%

7. For how long do you expect social distancing measures to be in effect in your forecast? 3.3 months

8. The U.S Federal Reserve has announced extensive measures aimed at supporting the economy

a. How large will the Fed's balance sheet be:

at the end of 2020?	$8.558 bil.
at the end of 2021?	$9.277 bil.

b. Do you think the Fed should will buy equities, directly or through an SPV?

Yes	No
13%	87%

9. a Is the roughly $2 trillion CARES act enough to support the economy from the COVID-19 induced slowdown in economic activity?

Yes	No
11%	89%

If no, how much more is needed? $2.35 tril.

Viewpoints: **A Sampling of Views on the Economy, Financial Markets and Government Policy Excerpted from Recent Reports Issued by Our Blue Chip Panel Members and Others**

Policy-Induced Downturns, Temporary Layoffs, and V-Shaped Recoveries

Among the many notable features of the current downturn is the surge in temporary layoffs: job loss among workers expecting to be recalled to the same employer at some point in the future. As shown in see Exhibit 1, just one month into the labor market downturn, the number of unemployed workers on furlough or temporary layoff has already approached 35-year highs (1,848k in March, vs. 1,894k in September 2009 and the all-time high of 2,519k in September 1982). Even more striking, the share of unemployed individuals on temporary layoff is already at an all-time high (26.5%), arguing for an outsized role for short-term job separations in the coming recession.

With the labor market at risk of losing 15 million jobs or more this quarter, the eventual pace of rehiring will be critical in determining the strength and sustainability of the eventual economic recovery. Illustratively, at the pre-crisis pace of job growth, it would take 5½ years to return to the previous employment level—all but ensuring an L- or U-shaped recovery for consumption and GDP.

We take some comfort in the rapid pace of hiring that followed the 1981-82 recession—or "Volcker Recession," so named because the Fed under Paul Volcker raised interest rates aggressively to combat high and rising inflation. Short-term layoffs were an important ingredient in the subsequent V-shaped recovery, as many of the record-high 2½ million temporarily separated workers were rehired once financial conditions eased (nonfinancial commercial paper yields fell 450bps from 2Q82 to 2Q83, and the S&P 500 rose 43% over the same period). Reflecting this and other factors, nonfarm payroll growth averaged 362k in the twelve months ended March 1984. Additionally, job growth exceeded 400k in four of those months, and three-year average job gains were the largest of any early-cycle recovery since WWII (+273k per month).

A related similarity with 2020 is that the Volcker recession was "man-made," in the sense that growth policy was subordinated to another societal goal Responding to the 1970s stagflation, the Fed deliberately reduced economic activity for over a year in order to slow inflation and anchor inflation expectations, much like today's economic policymakers are discouraging some economic activities in pursuit of a public health priority (fewer coronavirus infections).

When economic downturns are deliberately induced and negative growth policies are perceived as temporary, firms may be incentivized to minimize permanent layoffs (and the associated costs and revenue disruptions they produce). This may in turn lead to faster job growth early in the recovery, bolstering prospects for GDP to rebound as well—provided of course that these accelerators are not offset by new shocks or the second-round growth effects of business exit and banking-sector credit losses.

Echoing European successes with short-time work arrangements, we find that US labor market recoveries do tend to be more rapid when firms emphasized temporary layoffs in the recession itself. The three US recessions heavily emphasizing short-term layoffs also showed the sharpest unemployment declines during year one of the recovery. These three recessions (1974-75, 1979-80, 1981-82) also exhibited the three best post-recession labor market performances relative to consensus forecasts

Payroll data decomposed by industry and by establishment phase tell a similar story about the Volcker Recession. Nearly half of the sharp labor market rebound of 1983 reflected jobs returning to the same factories, retail stores, and homebuilders that had lost them

Not coincidentally, these were some of the sectors hardest hit by the monetary shock engineered by the Volcker Fed (unemployment, mortgage rates, credit card rates, and dollar appreciation were all in the double digits in 1981-82).

Returning to the post-corona labor market outlook, the univariate relationship and the March 2020 temporary layoff share (26.5% of unemployment) suggest scope for an additional 1.5pp decline in the jobless rate (in the first year of the eventual recovery). Policy factors unique to the current downturn may further increase temporary layoff activity (and subsequent worker recall)—for example the 100%+ wage replacement for some unemployment recipients or the small business grants that are conditional on rehiring lost labor.

Taken together, while the coronavirus and its effect on consumer psychology represent medium-term headwinds for some industries, our analysis increases the likelihood that others will exhibit V-shaped employment paths not long after the recession ends. And while rare historically, we believe several quarters of multi-million job gains (not annualized) are a reasonable expectation for the early stages of the recovery. Risks to this forecast are high, however: they include a more gradual removal of activity restrictions, possible second-round effects of business exit and financial spillovers, and of course the possibility that the recovery itself is derailed by a resurgence of infections.

Spencer Hill (Goldman Sachs Economic Research)

Major Announcement by Fed (April 9, 2020)

The Federal Reserve made a major announcement this morning, saying that they are taking actions to provide up to $2.3 trillion in loans to support the economy Specifically, the Fed announced that they will supply liquidity to banks through term financing to support the Small Business Administration's Paycheck Protection Program (PPP) The Fed's new Paycheck Protection Program Liquidity Facility will extend credit to financial institutions that originate PPP loans, taking the loans as collateral at face value. The Fed will also expand other facilities designed to keep financial markets functioning. Also, the Fed announced a Municipal Liquidity Facility that will offer up to $500 billion in lending to states and municipalities. In addition, the Fed's new Main Street Expanded Loan Facility will facilitate the issuance of up to $600 billion in loans to small and medium sized businesses from eligible banks. Banks will retain a 5 percent share of these loans. Businesses that have taken advantage of the PPP loans may also be eligible for the Main Street loans. Today's announcement by the Fed shows their commitment to supporting small and medium sized businesses through the coronavirus crisis It will support business confidence and help to reduce the rate of business failures. It will also help to minimize the peak unemployment rate over the next few years. The facilities now in place at the Fed could potentially be expanded further if the need arises later.

In a televised appearance this morning, Fed Chair Jay Powell said that financial market conditions have generally improved He promised to use the Fed's lending powers forcefully until the current crisis is over. Powell said that he expects output in the second quarter to be quite low. He said that he has every reason to believe that the economic recovery in the second half of this year can be robust, but that the path of the recovery will be determined by the path of the coronavirus. Powell is not concerned at this time about the potential for inflation later due to the rapid expansion of monetary and fiscal policy actions.

Robert A Dye (Comerica)

Calendar of Upcoming Economic Data Releases

Monday	Tuesday	Wednesday	Thursday	Friday
April 13	**14** Import & Export Prices (Mar) NFIB (Mar)	**15** Advance Retail Sales (Mar) IP & Capacity Utilization (Mar) MTIS (Feb) Empire State Mfg Survey (Apr) Home Builders (Apr) TIC Data (Feb) EIA Crude Oil Stocks Mortgage Applications	**16** New Residential Construction (Mar) Philadelphia Fed Mfg Business Outlook Survey (Apr) Business Leaders Survey (Apr) Weekly Jobless Claims Weekly Money Supply	**17** Composite Indexes (Mar)
20 Chicago Fed National Activity Index (Mar)	**21** Existing Home Sales (Mar) Philadelphia Fed Nonmanufacturing Business Outlook Survey (Apr)	**22** FHFA HPI (Feb) Treasury Auction Allotments (Apr) FRB Philadelphia Coincident Economic Activity Index(Mar) EIA Crude Oil Stocks Mortgage Applications	**23** IHS Markit Flash Composite PMI (Apr) New Residential Sales (Mar) Final Building Permits (Mar) Kansas City Fed Manufacturing Survey (Apr) Steel Imports (Mar) Weekly Jobless Claims Weekly Money Supply	**24** Advance Durable Goods (Mar) Consumer Sentiment (Apr, Final) Alternative Measures of Labor Underutilization (Q1)
27 Retail Trade Revisions NABE Business Conditions Survey (Q1) Texas Manufacturing Outlook Survey (Apr)	**28** Advance Intl Trade (Mar) Advance Inventories (Mar) Housing Vacancies (Q1) Case Shiller HPI (Feb) Consumer Confidence (Apr) Richmond Fed Mfg & Service Sector (Apr) Housing Vacancies & Homeownership (Q1) Texas Service Sector(Apr)	**29** GDP (Q1, Advance) Business Employment Dynamics (Q3) FOMC Meeting (Apr) Selected NIPA Tables & Summary Key Source Data (Q1,Adv) EIA Crude Oil Stocks Mortgage Applications	**30** Personal Income (Mar) Employment Cost Index(Q1) Agricultural Prices and Dallas Fed Trim-Mean PCE (Mar) Underlying NIPA Tables (Mar) Chicago PMI (Apr) Continued Claims by Industry by State (Mar) Weekly Jobless Claims Weekly Money Supply	**May 1** ISM Manufacturing (Apr) IHS Markit Mfg PMI (Apr) Construction (Mar)
4 Manufacturers' Shipments, Inventories & Orders (Mar) Senior Loan Officer Survey (Q2)	**5** Intl Trade/Supplement (Mar) ISM Nonmanufacturing (Apr) IHS Markit Services PMI(Apr)	**6** ADP Employment Report (Apr) Public Debt (Apr) EIA Crude Oil Stocks Mortgage Applications	**7** Productivity & Costs (Q1) Treasury Auction Allotments (Apr) Consumer Credit (Mar) Challenger Employment Report (Apr) Weekly Jobless Claims Weekly Money Supply	**8** Employment Situation (Apr) Wholesale Trade (Mar)
11 Kansas City Financial Stress Index (Apr)	**12** CPI (Apr) Monthly Treasury (Apr) NFIB (Apr) First Time Housing Affordability (Q1)	**13** Producer Prices (Apr) Transportation Services Index (Mar) EIA Crude Oil Stocks Mortgage Applications	**14** Import & Export Prices (Apr) Weekly Jobless Claims Weekly Money Supply	**15** Advance Retail Sales (Apr) IP & Capacity Utilization (Apr) MSIO Revisions**** (2019) Consumer Sentiment (May, Preliminary) MTIS (Mar) JOLTS (Mar) Empire State Mfg Survey (May) Professional Forecasters (Q2) TIC Data (Mar))
18 Business Leaders Survey (May) Home Builders (May) Kansas City Fed Labor Market Conditions Indicators (Apr)	**19** New Residential Construction (Apr) Retail E-Commerce Sales	**20** Advance Quarterly Services (Q1) CEW (Q4) EIA Crude Oil Stocks Mortgage Applications	**21** Existing Home Sales (Apr) Philadelphia Fed Mfg Business Outlook Survey (May) Existing Home Sales (Apr) Composite Indexes (Apr) Weekly Jobless Claims Weekly Money Supply	**22** Treasury Auction Allotments (May)

EXPLANATORY NOTES

For 44 years, ***Blue Chip Economic Indicators'*** monthly survey of leading business economists has provided private and public sector decision-makers timely and accurate forecasts of U.S. economic growth, inflation and a host of other critical indicators of business activity. The newsletter utilizes a standardized format that provides a fast read on the prevailing economic outlook. The survey is conducted over two days, generally beginning on the first working day of each month. Forecasts of U.S. economic activity are collected from more than 50 leading business economists each month. The newsletter is generally finished on the third day following completion of the survey and delivered to subscribers via e-mail or first class mail.

The hallmark of ***Blue Chip Economic Indicators*** is its *consensus forecasts*. Numerous studies have shown that by averaging the opinions of many experts, the resulting consensus forecasts tend to be more accurate over time than those of any single forecaster.

Annual Forecasts On pages 2 and 3 of the newsletter are individual and consensus forecasts of U.S. economic performance for this year and next. The names of the institutions that contribute forecasts to these pages are listed on the left of the page. They are ranked from top to bottom based on how fast they expect the U.S. economy to expand in the current year. Some of these institutions have one or more asterisks (*) after their names, denoting how many times they have won the annual *Lawrence R Klein Award for Blue Chip Forecast Accuracy*. The award winner is determined by W.P. Carey School of Business at Arizona State University

Across the top of pages 2 and 3 is a list of the variables for which the individual cooperators have provided forecasts. Definitions and organizations that issue estimates for these variables are found at the bottom of page 3 For columns 1-9, the forecasts are for the year-over-year percent change in each variable. Columns 10-12 represent average percentage levels of the year in question. Column 15 is an inflation-adjusted dollar level, measured in billions of chained 2012 dollars. High and low forecasts from the panel members for each variable are denoted with an "H" or "L"

Immediately below the forecasts of the individual contributors are this month's consensus forecasts. The consensus is derived by averaging our panel members' forecasts for each variable. Below the consensus forecasts are averages of this month's ten highest and ten lowest forecasts for each variable. Below them are last month's consensus forecasts. To put the forecasts in context, we include four years of historical data for each variable at the bottom of page 2. Please note that these figures can change due to government revisions of previously released estimates. Below the historical data are the number of forecasts changed from a month ago for each variable, the median forecast for each variable and a diffusion index. The diffusion index serves as a leading indicator of future changes in the consensus forecast. A reading above 50% hints of future increases in the consensus; a reading below 50% hints of future declines. The diffusion index is calculated by adding to the number of forecasters who raised their forecasts for a particular variable this month, half the number of those who left their forecasts unchanged, then dividing the sum by the total number of those contributing forecasts.

Historical Annual Consensus Forecasts Page 4 contains the forecasts from previous issues for the current and subsequent year so that subscribers can see how the outlook has changed over time. Each issue also includes graphs and analysis focusing on noteworthy changes and trends in the consensus outlook.

Quarterly Forecasts Page 5 contains quarterly historical data and consensus forecasts of the U.S. economy's performance. For columns 1-7, the forecasts are for the quarter-over-quarter, seasonally-adjusted, annualized percent change in each variable Columns 8-10 represent average percentage levels for the quarter in question. Columns 11 and 12 represent seasonally-adjusted, annualized levels for the quarter, measured in billions of inflation-adjusted dollars. As is the case on pages 2-3, the consensus quarterly forecasts on the top half of page 5 are simple averages of our contributors' forecasts. The high-10 and low-10 forecasts are averages of the 10 highest and 10 lowest forecasts for each variable. At the bottom of page 5 are additional quarterly consensus forecasts for Real GDP, GDP Price Index, Industrial Production and Consumer Price Index These figures are produced by taking the annualized quarterly consensus forecasts found on the top of page 5 and computing a quarterly dollar value for Real GDP, and average quarterly index levels for the GDP Price Index, Industrial Production and the Consumer Price Index We then compute a year-over-year percentage change between the relevant quarter and the corresponding quarter of the previous year

International Forecasts Pages 6-7 contain historical data and consensus forecasts of five key economic variables for 15 of the U.S.'s largest trading partners. A list of the institutions contributing forecasts to these pages can be found at the bottom of page 7. Columns 1 and 2 are forecasts of the year-over-year percent change in inflation-adjusted economic growth and consumer price inflation for this year and next. Column 3 is each nation's estimated current account surplus or deficit, reported in billions of current U S. dollars. Column 4 is the estimated value of each nation's currency versus the U.S. dollar at the end of this year and next. Column 5 is the estimated level of interest rates on 3-month interest rates in each nation at the end of this year and next. Immediately below this month's consensus and the top 3 and bottom 3 averages for each variable are last month's forecasts and a limited amount of historical data. The historical data may change from month-to-month due to government revisions.

Special Questions On page 14, we report on panel members' answers to our special questions. Individuals' responses to the special questions are never displayed, only consensus, top-10 and bottom-10 results *In March and October, we publish our semi-annual, long-range surveys.* In addition to our usual forecasts for this year and next, the semiannual, long-range survey results provide subscribers with consensus forecasts of all the variables found on pages 2 and 3 for the each of the following five years, plus an average for the five-year period after that

Blue Chip Econometric Detail With the March, June, September and December issues, subscribers also receive a four-page quarterly supplement entitled *Blue Chip Econometric Detail* The supplement contains forecasts of an expanded list of economic and financial variables that are derived from the consensus forecasts found in *Blue Chip Economic Indicators*. Macroeconomic Advisers by IHS Markit of St Louis, Missouri produces this forecast detail based on a simulation of its econometric model of the U.S. economy.

*Should you have questions about the contents, or methods used to produce **Blue Chip Economic Indicators**, please contact Joseph Aguinaldo at (212) 986-9300 or email him at. bluechip@haver com*

S&P Global
Ratings

RatingsDirect®

COVID-19: The Outlook For North American Regulated Utilities Turns Negative

April 2, 2020

PRIMARY CREDIT ANALYST

Gabe Grosberg
New York
(1) 212-438-6043
gabe.grosberg
@spglobal.com

SECONDARY CONTACT

Kevin M Sheridan
New York
+ 1 (212) 438 3022
kevin.sheridan
@spglobal.com

Key Takeaways

- We are revising our assessment of the North America regulated utility industry to negative from stable
- We expect that the utility industry will remain a high-credit-quality investment-grade industry.
- We expect that the industry's median rating, which is 'A-', could weaken to the 'BBB+' level.
- Prior to the coronavirus outbreak in North America about 25% of the utilities had a negative outlook or ratings that were on CreditWatch with negative implications.
- Additionally, many utilities with a stable outlook have minimal financial cushion at the current rating level
- We expect COVID-19 will weaken the industry's 2020 funds from operations (FFO) to debt by about 100 basis points.

S&P Global Ratings acknowledges a high degree of uncertainty about the rate of spread and peak of the coronavirus outbreak Some government authorities estimate the pandemic will peak about midyear, and we are using this assumption in assessing the economic and credit implications We believe the measures adopted to contain COVID-19 have pushed the global economy into recession (see our macroeconomic and credit updates here www spglobal.com/ratings) As the situation evolves, we will update our assumptions and estimates accordingly

S&P Global Ratings is revising downward its assessment of the North America utility industry to negative from stable. The North America utility industry consists of about 250 water, gas, and electric utilities While we expect the sector to remain an investment-grade industry, we nevertheless project a modest weakening of credit quality within the industry. Credit quality had been gradually weakening prior to the COVID-19 outbreak with about 25% of companies on negative outlook or with ratings on CreditWatch with negative implications We view COVID-19 as a source of incremental pressure and expect that the recession will lead to an increasing number of downgrades and negative outlooks. Currently, the median rating within the industry is 'A-' and over the next 12 months, we expect that the industry median could move to 'BBB+'

THIS WAS PREPARED EXCLUSIVELY FOR USER TED WOOD
NOT FOR REDISTRIBUTION UNLESS OTHERWISE PERMITTED

Credit Quality Was Weakening Even Before COVID-19

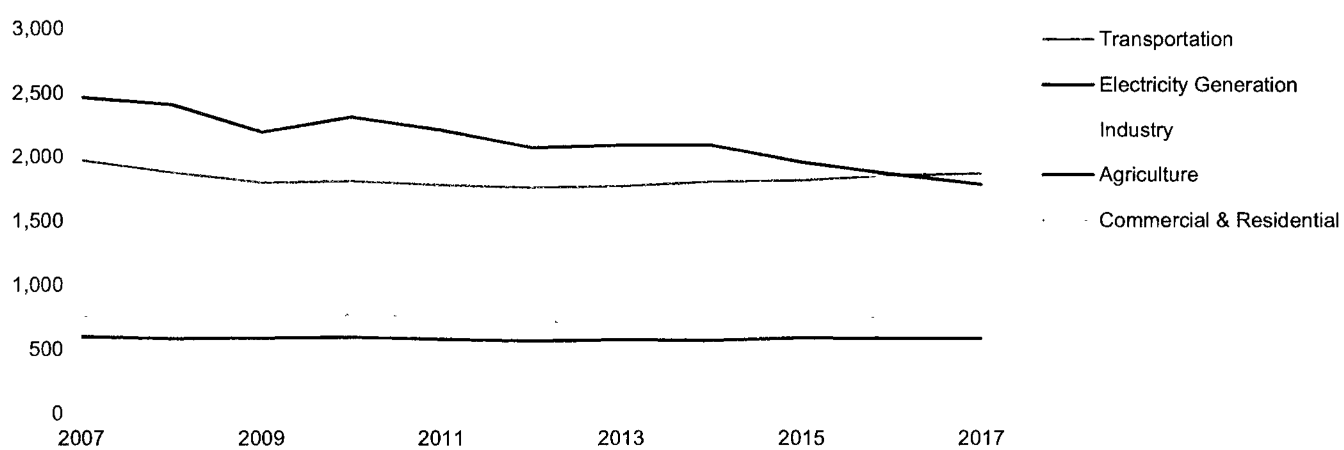
The North America regulated utility industry's credit quality was already weakening prior to COVID-19. This reflected companies' more consistent ability to manage credit measures closer to the downgrade threshold, leaving very minimal financial cushion at the current rating level. We generally view the industry's cash flows as more predictable and steady than most other corporate industries. Even so, unless a management team can proactively implement corrective actions, a utility with minimal financial cushion at the current rating coupled with an unexpected material event, typically results in a negative outlook or a downgrade

The industry has faced many unexpected events and credit obstacles over the past two years Some of these include safety (NiSource Inc.), wildfires (PG&E Corp., Edison International, and Sempra Energy), large capital projects (Southern Co , SCANA Corp , Eversource Energy, Duke Energy Corp., and Dominion Energy Inc), utility acquisition (Fortis Inc., Emera Inc., ENMAX Corp., and NextEra Energy Inc), and nonutility acquisitions (DTE Energy Co.). Each of these instances have either significantly reduced the prior cushion at the current rating level, triggered negative outlooks, or downgrades.

Also pressuring the industry's credit quality is the critical focus on environmental, social, and governance (ESG) factors. Over the past decade, the industry has done an outstanding job to significantly reduce its greenhouse gas emissions and reduce its reliance on coal-fired generation

Chart 1

Total U.S. Greenhouse Gas Emissions By Economic Sector From 2007-2017
Million metric tons of CO2 equivalents



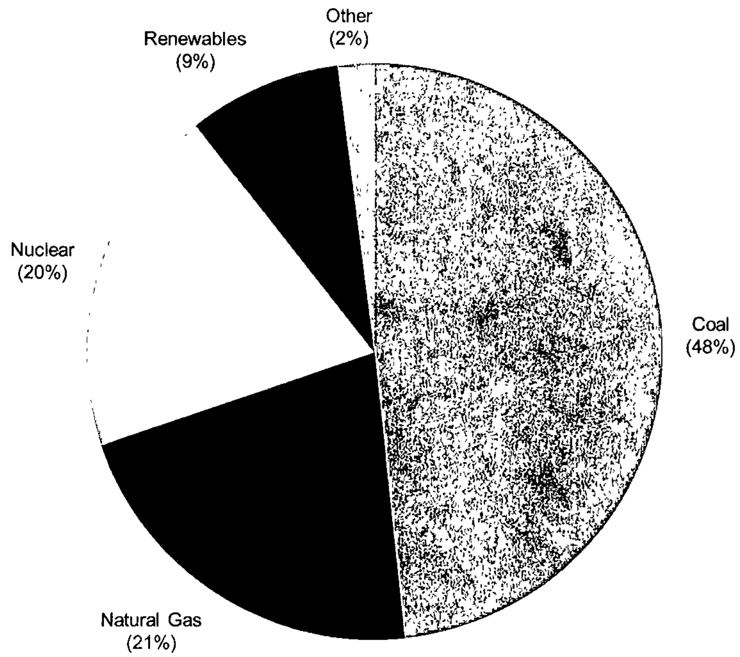
Source: U.S. Energy Information Administration.

Copyright © 2020 by Standard & Poor's Financial Services LLC. All rights reserved.

THIS WAS PREPARED EXCLUSIVELY FOR USER TED WOOD
NOT FOR REDISTRIBUTION UNLESS OTHERWISE PERMITTED

Chart 2

U.S. 2008 Generation Mix



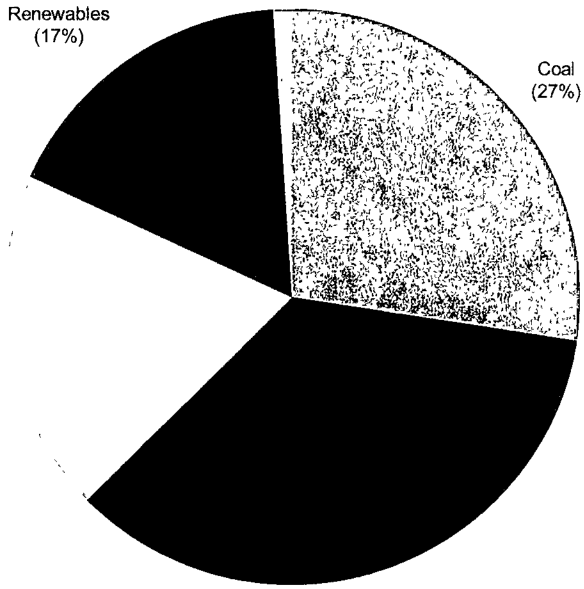
Source. U.S. Energy Information Administration.

Copyright © 2020 by Standard & Poor's Financial Services LLC. All rights reserved

THIS WAS PREPARED EXCLUSIVELY FOR USER TED WOOD
NOT FOR REDISTRIBUTION UNLESS OTHERWISE PERMITTED

Chart 3

U.S. 2018 Generation Mix



Source. U.S. Energy Information Administration
Copyright © 2020 by Standard & Poor's Financial Services LLC. All rights reserved.

However, there are individual companies such as American Electric Power Co. Inc , Ameren Corp , and Evergy Inc that despite having long-term plans to reduce their reliance on coal-fired generation, will continue to rely heavily on that fuel source for the next decade, possibly pressuring credit quality.

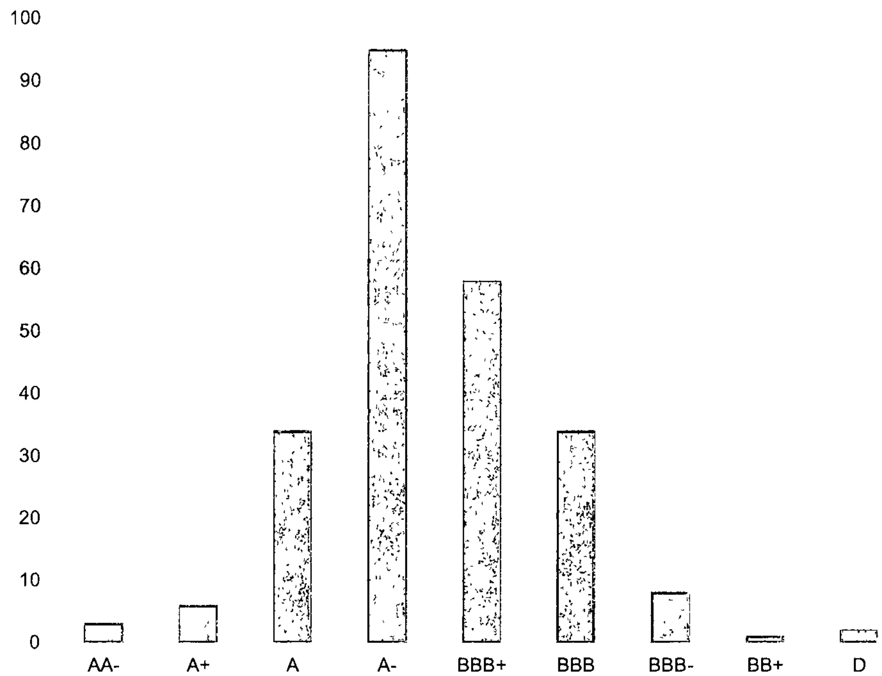
Rating Upgrades And Downgrades

Over the past decade, there have been generally more upgrades than downgrades in the sector. This has strengthened the utilities' credit quality since the financial recession and currently, the median rating within the industry is 'A-'

THIS WAS PREPARED EXCLUSIVELY FOR USER TED WOOD
NOT FOR REDISTRIBUTION UNLESS OTHERWISE PERMITTED

Chart 3

North American Regulated Utilities Ratings Distribution 2019



Source S&P Global Ratings

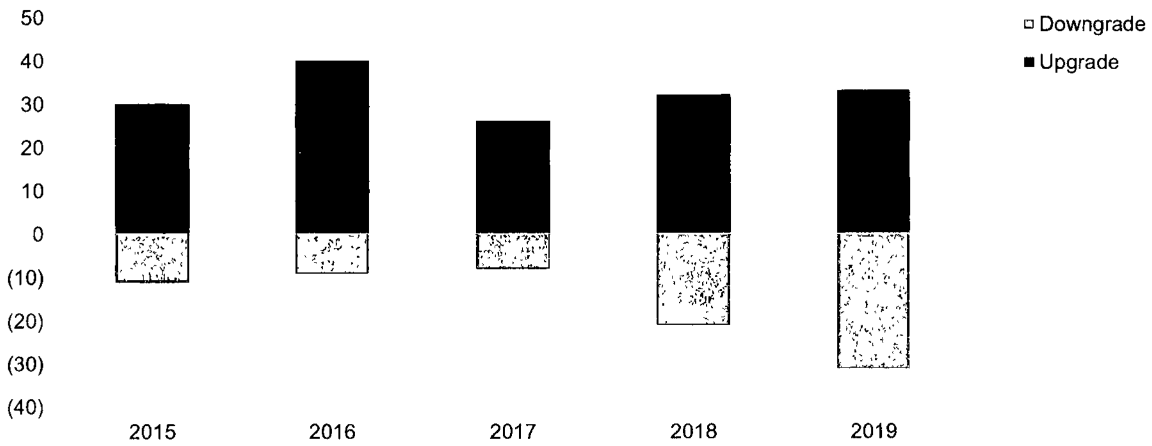
Copyright © 2020 by Standard & Poor's Financial Services LLC All rights reserved.

When analyzing our rating upgrades and downgrades in the sector for 2019, even prior to COVID-19, we note a weakening of credit quality.

THIS WAS PREPARED EXCLUSIVELY FOR USER TED WOOD
NOT FOR REDISTRIBUTION UNLESS OTHERWISE PERMITTED

Chart

North American Regulated Utilities Upgrades And Downgrades



Source: S&P Global Ratings.

Copyright © 2020 by Standard & Poor's Financial Services LLC. All rights reserved.

While 2019 may initially appear to be similar to prior years with upgrades outpacing downgrades at 33 to 31, the underlying analysis tells a different story In 2019, about 60% of the upgrades were attributed to S&P Global Ratings' revised group rating methodology criteria Under the revised criteria, we placed more emphasis on the regulation of a utility allowing for a subsidiary with effective regulation and with a stand-alone credit profile that is higher than its group to potentially be rated higher Absent the revised criteria, downgrades would have outpaced upgrades by 30 to 13 in 2019 This is a clear indication that even before COVID-19, the credit quality of the North America regulated utility sector had weakened.

Operating With Minimal Financial Cushion

While many companies with a negative outlook such as Puget Energy Inc have minimal financial cushion at their current rating level, many others with a stable outlook also have minimal financial cushion at their current rating level. Companies with a stable outlook and minimal financial cushion include Exelon Corp., ALLETE Inc , American Water Works Co Inc , Edison International, AVANGRID Inc., DPL Inc., CenterPoint Energy Inc., and Madison Gas & Electric Co As the financial effects of COVID-19 continue to take hold, we expect that even companies with stable outlooks may experience ratings downward pressure This is another reason that underscores our assessment that the industry outlook has turned negative

How COVID-19 May Affect The Sector

In general, we assume that the U S will experience more than a 12% contraction in GDP during the second quarter and estimate the pandemic will peak between June and August (Global Macroeconomic Update, March 24· A Massive Hit To World Economic Growth, March 24, 2020)

For the North America utility industry, we expect that COVID-19 will reduce the commercial and

THIS WAS PREPARED EXCLUSIVELY FOR USER TED WOOD
NOT FOR REDISTRIBUTION UNLESS OTHERWISE PERMITTED

industrial (C&I) usage (North American Regulated Utilities Face Additional Risks Amid Coronavirus Outbreak, March 19, 2020) While some utilities will be able to offset some of the lower C&I usage through various regulatory mechanisms that include decoupling of revenues mechanisms and formula rates, many others will see a weakening of sales Furthermore, as the recession continues to take hold, we expect bad debt expense will increase as it becomes increasingly more difficult for customers to pay their bills While many utilities can defer these costs for future recovery, as these balances grow, historically we have seen incidents where utilities negotiate with their commission's to write off some of these costs as part of a larger agreement Overall, we expect that these effects will result in a weakening of credit measures

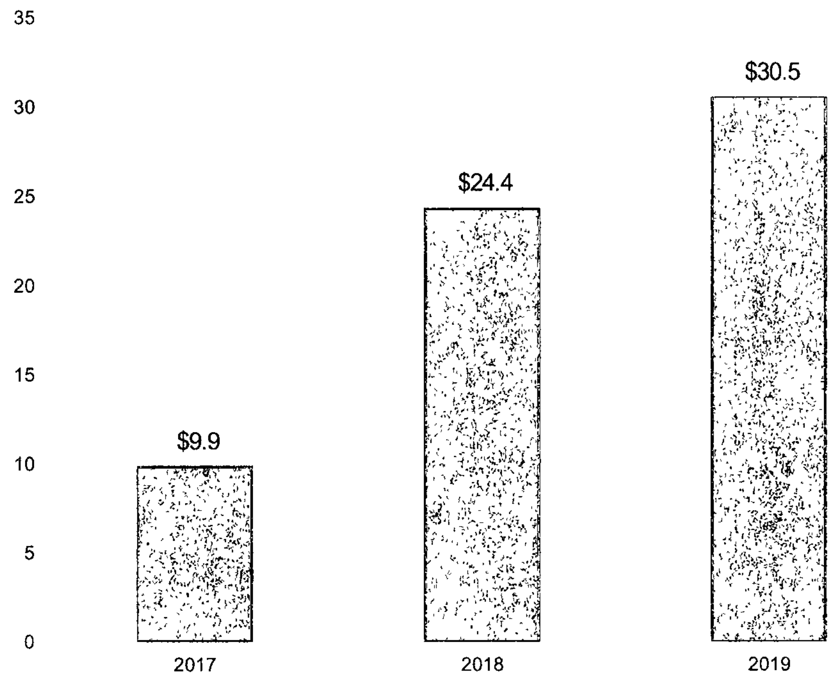
On a positive note, the industry continues to exhibit adequate liquidity and access to the debt markets, despite uneven performance of the commercial paper market for tier 2 issuers The industry is benefiting from proactive risk management of establishing large credit facilities, having good access to additional liquidity through new term loans from banks, and public issuance of utility debt. These positive developments contrast to the last financial recession, when many utilities fully drew on their available credit lines and access to the banks or to the public debt market was effectively shut for many weeks

Yet availability to the equity markets remains extraordinarily challenging In 2019, the industry issued more than $30 billion in equity to preserve credit quality and heading into 2020 many companies within the industry assumed equity issuances as part of their financing plans. Given the industry's negative discretionary cash flow because of its high capital spending and lack of access to the equity markets, we expect that this will also lead to a weakening of credit measures

THIS WAS PREPARED EXCLUSIVELY FOR USER TED WOOD
NOT FOR REDISTRIBUTION UNLESS OTHERWISE PERMITTED

Chart 6

North American Regulated Utilities Equity Issuance In Billions



Source: S&P Global Ratings
Copyright © 2020 by Standard & Poor's Financial Services LLC. All rights reserved

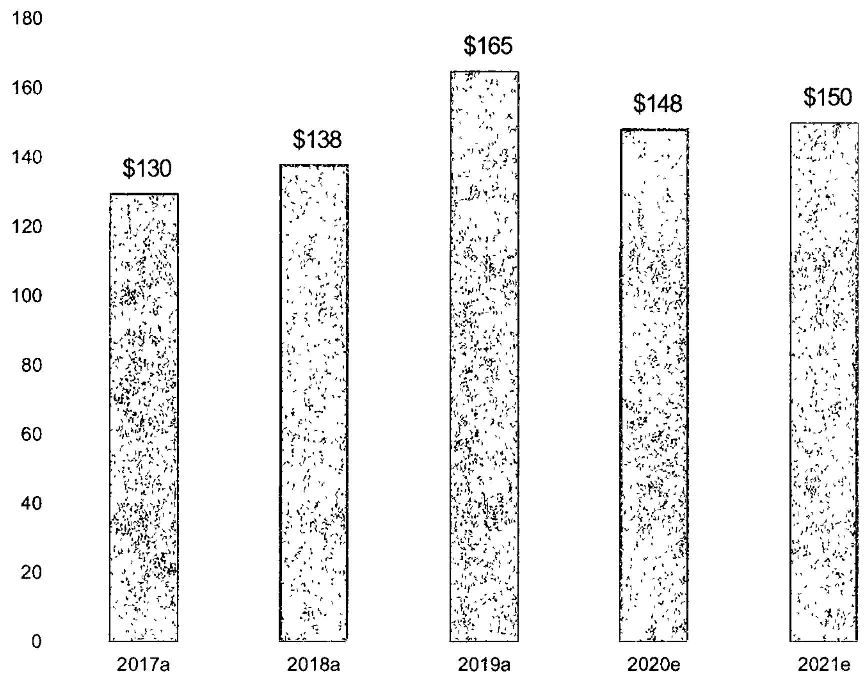
Another area of concern are utilities that rely to various degrees on nonutility businesses that have commodity exposure (S&P Global Ratings Cuts WTI And Brent Crude Oil Price Assumptions Amid Continued Near-Term Pressure, March 19, 2020) These include OGE Energy Corp., CenterPoint Energy Inc , DTE Energy Co., Dominion Energy Inc , Public Service Enterprise Group Inc., NextEra Energy Inc , and Exelon Corp While many of them are well hedged in the near term, volumetric risk and a longer-term weakening of commodity prices could have a material effect on their credit measures Overall, assuming that the effects of COVID-19 is only temporary, we would expect that the industry's 2020 FFO to debt will weaken by about 100 basis points, consistent with our revised negative outlook for the industry

The Industry Has Levers

Depending on the severity of the recession, the industry has important levers that could mitigate some of the risks This includes reducing capital spending and dividends. Currently, we estimate that 2020 capital spending will approximate $150 billion.

THIS WAS PREPARED EXCLUSIVELY FOR USER TED WOOD
NOT FOR REDISTRIBUTION UNLESS OTHERWISE PERMITTED

North American Regulated Utilities Capital Expenditures In Billions



a--actual. e--estimate Source: S&P Global Ratings

Copyright © 2020 by Standard & Poor's Financial Services LLC All rights reserved.

Based on our conversations with the companies within the industry there is a wide range as to how deeply a utility can reduce its capital spending and still maintain safe and reliable services. Some utilities can only reduce capital spending by as little as 15%, others by as much as 60% Our analysis indicates that the majority of utilities could reduce their capital spending on a temporary basis by about 40% and maintain safe operations Should the recession prolong, we would expect that the industry would generally first reduce capital spending and only afterward cut dividends There is precedent that during times of high financial stress, utilities have reduced their dividends and we would expect that the industry, if necessary, would use this lever, acting prudently to preserve credit quality

Credit quality of the North America regulated utility industry was already weakening prior to COVID-19 We believe that incremental challenges that the industry will face from this recession exacerbates financial pressure and underpins our revised negative outlook for the industry. However, we also expect that this industry's credit quality will continue to outperform most other corporate industries despite these challenges Furthermore, we expect that the utilities will use the levers available to them to reduce credit risks and limit the financial impact from COVID-19. Overall, while we expect a weakening to the industry's credit quality, we continue to firmly believe that this industry will remain a high-quality, investment-grade industry

This report does not constitute a rating action.

THIS WAS PREPARED EXCLUSIVELY FOR USER TED WOOD
NOT FOR REDISTRIBUTION UNLESS OTHERWISE PERMITTED

Copyright © 2020 by Standard & Poor's Financial Services LLC All rights reserved

No content (including ratings, credit-related analyses and data, valuations, model, software or other application or output therefrom) or any part thereof (Content) may be modified, reverse engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of Standard & Poor's Financial Services LLC or its affiliates (collectively, S&P) The Content shall not be used for any unlawful or unauthorized purposes S&P and any third-party providers, as well as their directors, officers, shareholders, employees or agents (collectively S&P Parties) do not guarantee the accuracy, completeness, timeliness or availability of the Content S&P Parties are not responsible for any errors or omissions (negligent or otherwise), regardless of the cause, for the results obtained from the use of the Content, or for the security or maintenance of any data input by the user The Content is provided on an "as is" basis S&P PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT'S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION In no event shall S&P Parties be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs or losses caused by negligence) in connection with any use of the Content even if advised of the possibility of such damages

Credit-related and other analyses, including ratings, and statements in the Content are statements of opinion as of the date they are expressed and not statements of fact. S&P's opinions, analyses and rating acknowledgment decisions (described below) are not recommendations to purchase, hold, or sell any securities or to make any investment decisions, and do not address the suitability of any security S&P assumes no obligation to update the Content following publication in any form or format The Content should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions S&P does not act as a fiduciary or an investment advisor except where registered as such While S&P has obtained information from sources it believes to be reliable, S&P does not perform an audit and undertakes no duty of due diligence or independent verification of any information it receives Rating-related publications may be published for a variety of reasons that are not necessarily dependent on action by rating committees, including, but not limited to, the publication of a periodic update on a credit rating and related analyses

To the extent that regulatory authorities allow a rating agency to acknowledge in one jurisdiction a rating issued in another jurisdiction for certain regulatory purposes, S&P reserves the right to assign, withdraw or suspend such acknowledgment at any time and in its sole discretion S&P Parties disclaim any duty whatsoever arising out of the assignment, withdrawal or suspension of an acknowledgment as well as any liability for any damage alleged to have been suffered on account thereof

S&P keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities As a result, certain business units of S&P may have information that is not available to other S&P business units S&P has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process

S&P may receive compensation for its ratings and certain analyses, normally from issuers or underwriters of securities or from obligors. S&P reserves the right to disseminate its opinions and analyses S&P's public ratings and analyses are made available on its Web sites, www standardandpoors com (free of charge), and www ratingsdirect com (subscription), and may be distributed through other means, including via S&P publications and third-party redistributors Additional information about our ratings fees is available at www standardandpoors com/usratingsfees

STANDARD & POOR'S, S&P and RATINGSDIRECT are registered trademarks of Standard & Poor's Financial Services LLC

THIS WAS PREPARED EXCLUSIVELY FOR USER TED WOOD
NOT FOR REDISTRIBUTION UNLESS OTHERWISE PERMITTED

INFRASTRUCTURE AND PROJECT FINANCE

MOODY'S
INVESTORS SERVICE

SECTOR COMMENT
6 April 2020

Rate this Research

Contacts

Nana Hamilton +1 212 553 9440
AVP-Analyst
nana.hamilton@moodys.com

Domenic Giovannone +1 212 553 1647
Associate Analyst
domenic.giovannone@moodys.com

Brendan Sheehan +1 212 553 0402
[illegible]
brendan.sheehan@moodys.com

Michael G Haggarty +1 212 553 7172
Associate Managing Director
michael.haggarty@moodys.com

Jim Hempstead +1 212 553 4318
[illegible]
james.hempstead@moodys.com

Jeffrey F Cassella +1 212 553 1665
[illegible]
jeffrey.cassella@moodys.com

Jairo Chung +1 212 553 5123
[illegible]
jairo.chung@moodys.com

Robert Petrosino CFA +1 212 553 1946
[illegible]
robert.petrosino@moodys.com

Laura Schumacher +1 212 553 3853
[illegible]
laura.schumacher@moodys.com

Ryan Wobbrock +1 212 553 7104
[illegible]
ryan.wobbrock@moodys.com

Regulated Electric and Gas Utilities – US

Dividends a major source of cash if coronavirus downturn is prolonged

Shareholder dividends provide US regulated utilities with a significant source of internal cash that could help them offset the impact of a potentially prolonged coronavirus-related economic downturn We expect US GDP to contract 2% in 2020, which will include a steep 4 3% contraction in the first half of the year, before recovering to 2 3% growth in 2021 (see "Global Macro Outlook 2020-21 [March 25, 2020 Update]: The coronavirus will cause unprecedented shock to the global economy") As recessionary indicators build, some utilities will reassess their dividend policy

In 2019, we estimate US utilities paid out $281 billion in shareholder dividends, or almost 70% of aggregate net income As a critical infrastructure sector, most investors view utilities as an attractive asset class during periods of market volatility A predictable dividend policy, and effective constituency outreach programs with regulators help contribute to a 10-year average cumulative probability of default that is about four times lower than all non-financial corporates

Dividends are authorized by a company's board of directors The disclosure of dividend policies is one of the factors we consider when examining a company's corporate governance practices (see "Non-financial companies - Global: Corporate governance assessments for publicly traded non-financial companies") We also look at the degree of consistency with which companies comply with its stated dividend policies That said, the ability to adjust capital dividend payments in response to significant market shocks is a credit positive (see "Utilities and power companies: Corporate governance assessments show generally credit friendly characteristics")

In a prolonged economic downturn, boards of directors are likely to review dividend plans as an option to conserve cash We think utilities with high payout ratios are more likely to scale back dividend plans CenterPoint Energy Inc (Baa2 stable), which had a payout ratio of 86% in 2019 announced a 48% reduction in its dividend on 1 April 2020 driven primarily by a reduction in cash flow from its Enable Midstream Partners, LP (Baa3 stable) investment The dividend reduction translates to approximately $275 million in annual savings based on 2019 average shares outstanding For fiscal year 2019, other utilities with high payout ratios include Dominion Energy Inc (Baa2 stable), PNM Resources Inc (Baa3 stable), FirstEnergy Corp (Baa3 stable) and NiSource Inc (Baa2 stable)

This document has been prepared for the use of Kenneth Kenny and is protected by law It may not be copied transferred or disseminated unless authorized under a contract with Moody's or otherwise authorized in writing by Moody's

Exhibit 1

Utilities paid $28.1 billion in shareholder dividends in 2019, roughly 69% of the $40.9 billion net income

Ranked by 2019 dividend payout ratios ($ millions)

Company	Rating	Outlook	2019 Common Dividend	2019 Net Income	2019 Payout Ratio	2018-2019 YOY Dividend Growth	Expected Growth Guidance for 2020 [1]
Dominion Energy, Inc [2]	Baa2	Stable	$2,983	$1,341	222%	9 9%	2 5%
PNM Resources, Inc [3]	Baa3	Stable	$93	$77	120%	8 5%	5 5%
FirstEnergy Corp	Baa3	Stable	$814	$849	96%	5 6%	3 0%
NiSource Inc	Baa2	Stable	$299	$328	91%	2 6%	6 0%
CenterPoint Energy, Inc	Baa2	Stable	$577	$674	86%	3 6%	2 0%
Avangrid, Inc	Baa1	Negative	$545	$700	78%	0 9%	N/A
Eversource Energy	Baa1	Stable	$663	$909	73%	5 9%	6 0%
Duke Energy Corporation	Baa1	Stable	$2,668	$3,707	72%	3 0%	2 0%
American Electric Power Company, Inc	Baa1	Negative	$1,350	$1,921	70%	7 1%	3 0%
Evergy, Inc	Baa2	Stable	$463	$670	69%	11 2%	N/A
OGE Energy Corp	(P)Baa1	Stable	$299	$434	69%	7 9%	5 0%
Consolidated Edison, Inc	Baa2	Stable	$924	$1,343	69%	3 5%	3 4%
PPL Corporation	Baa2	Stable	$1,192	$1,745	68%	0 6%	0 6%
Spire Inc	Baa2	Stable	$119	$179	67%	5 3%	5 1%
WEC Energy Group, Inc	Baa1	Stable	$745	$1,134	66%	6 8%	7 2%
ALLETE, Inc	Baa1	Stable	$121	$186	65%	4 9%	6 0%
Otter Tail Corporation	Baa2	Stable	$56	$87	64%	4.5%	5 7%
CMS Energy Corporation	Baa1	Stable	$436	$680	64%	7 0%	7 0%
NextEra Energy, Inc	(P)Baa1	Stable	$2,408	$3,769	64%	12 6%	12.0%
Edison International	Baa3	Stable	$810	$1,284	63%	2 0%	4 1%
Black Hills Corporation	Baa2	Stable	$125	$199	63%	6 2%	4 4%
Pinnacle West Capital Corporation	A3	Negative	$330	$538	61%	6 1%	6 0%
Alliant Energy Corporation	(P)Baa2	Stable	$338	$557	61%	5 9%	6 0%
DTE Energy Company	Baa2	Stable	$692	$1,167	59%	7 1%	7 0%
Xcel Energy Inc	Baa1	Stable	$791	$1,372	58%	6 6%	6 2%
Entergy Corporation	Baa2	Stable	$712	$1,241	57%	2 2%	3 7%
Ameren Corporation	Baa1	Stable	$472	$828	57%	3 9%	2 5%
Northwestern Corporation	Baa2	Stable	$115	$202	57%	4 5%	4 3%
ONE Gas, Inc	A2	Stable	$105	$187	56%	8 7%	7.0%
Public Service Enterprise Group Incorporated	Baa1	Stable	$950	$1,693	56%	4 4%	4 3%
IDACORP, Inc	Baa1	Stable	$130	$233	56%	6 7%	5 0%
Southwest Gas Holdings, Inc	Baa1	Negative	$116	$214	54%	4 8%	4 6%
Southern Company (The)	Baa2	Stable	$2,570	$4,739	54%	3.4%	N/A
Avista Corporation	(P)Baa2	Stable	$103	$197	52%	4 0%	4 5%
Unitil Corporation	Baa2	Stable	$22	$44	50%	1 4%	1.4%
Sempra Energy	Baa1	Negative	$993	$2,055	48%	8 1%	8 0%
Atmos Energy Corporation	A1	Stable	$246	$511	48%	8 2%	9 5%
Exelon Corporation	Baa2	Stable	$1,408	$2,936	48%	5 1%	5 0%
Average					**69%**	**5.5%**	**5.0%**
Median					**63%**	**5 4%**	**5.0%**

[1] Based DPS growth guidance or EPS growth guidance and payout ratio target announced before the deterioration in economic conditions
[2] In 2019, Dominion had $1 3 billion in non-cash impairments in addition to roughly $500 million of one-time merger related expenses that reduced net income
[3] Payout ratio elevated due to negative impact on earnings of non-cash impairment associated with the disallowance of certain coal plant upgrade capital
Sources FactSet, company documents and Moody's Investors Service

From a credit perspective, companies with high payout ratios stand out because the incremental cash outflow for growing dividends requires more financing Some utilities, such as Dominion and FirstEnergy, indicated a reduction in dividend growth rate before the pandemic, in part to manage their payout ratios down, and reduce their need for incremental debt For now, most utilities are still holding onto their publicly announced dividend growth guidance Before the coronavirus outbreak, we were estimating growth in dividends by about 5% in 2020, up to roughly $30 billion from about $28 billion in 2019

This document has been prepared for the use of Kenneth Kenny and is protected by law It may not be copied, transferred or disseminated unless authorized under a contract with Moody's or otherwise authorized in writing by Moody's

If the coronavirus-fueled economic recession were to reduce the aggregate net income of US regulated utilities by 10% to $36 billion, from about $40 billion in 2019, the average dividend payout ratio would jump to about 80%

Slower dividend growth helps future cash flow

We do not expect to see a widespread reduction in utility dividends, but the dividend growth rate could decline materially Utilities with above-average payout ratios benefit from slower dividend growth, especially if cash flow declines Of the utilities with high payout ratios, the ones most likely to scale back their dividend plans are those with significant debt balances and little flexibility to cope with cash flow deterioration

Although the ratio of cash flow from operations before changes in working capital (CFO pre-WC) to debt is weighted most heavily in our regulated electric and gas utilities methodology, the next most important ratio is CFO pre-WC less dividends to debt, commonly referred to as retained cash flow (RCF) to debt The RCF-to-debt ratio provides insight into dividend policies and how management balances the interests of shareholders, fixed-income investors and other stakeholders

This document has been prepared for the use of Kenneth Kenny and is protected by law It may not be copied, transferred or disseminated unless authorized under a contract with Moody's or otherwise authorized in writing by Moody's

Exhibit 2

Retained cash flow (CFO pre-WC less dividends) to debt ratios could pressure high dividend payers

Ranked by ratio of (CFO pre-WC) less dividends to debt (2019)

Company	2019 (CFO PreWC - Dividends)	2019 Adjusted Debt	2019 (CFO PreWC - Dividends)/Debt
Edison International	($1,359)	$20,671	-6 6%
PPL Corporation	$1,793	$23,752	7 6%
FirstEnergy Corp	$1,867	$24,062	7 8%
Dominion Energy, Inc	$3,276	$40,732	8 0%
Eversource Energy	$1,513	$17,112	8 8%
CenterPoint Energy, Inc	$1,461	$16,461	8 9%
Avangrid, Inc	$848	$9,059	9.4%
Southern Company (The)	$4,459	$47,490	9 4%
Consolidated Edison, Inc	$2,260	$23,902	9 5%
Spire Inc	$314	$3,289	9 5%
Sempra Energy	$2,651	$27,455	9 7%
NorthWestern Corporation	$235	$2,400	9 8%
American Electric Power Company, Inc	$3,057	$30,800	9 9%
Entergy Corporation	$2,396	$22,796	10 5%
Avista Corp	$252	$2,372	10 6%
Duke Energy Corporation	$6,606	$62,105	10 6%
IDACORP, Inc	$257	$2,349	10 9%
Alliant Energy Corporation	$792	$7,230	11 0%
WEC Energy Group, Inc	$1,450	$12,935	11 2%
Black Hills Corporation	$406	$3,587	11 3%
NiSource Inc.	$1,198	$10,276	11 7%
Evergy, Inc	$1,319	$11,167	11 8%
CMS Energy Corporation	$1,343	$11,351	11 8%
ALLETE, Inc	$214	$1,806	11 9%
NextEra Energy, Inc	$5,103	$42,303	12 1%
Public Service Enterprise Group Incorporated	$2,102	$17,416	12 1%
Unitil Corporation	$73	$604	12 1%
DTE Energy Company	$2,235	$18,285	12 2%
PNM Resources, Inc	$426	$3,417	12 5%
OGE Energy Corp	$473	$3,484	13 6%
Xcel Energy Inc	$2,679	$19,632	13 6%
ONE Gas, Inc	$269	$1,941	13 8%
Southwest Gas Holdings, Inc	$461	$3,192	14 4%
Pinnacle West Capital Corporation	$920	$6,150	15 0%
Exelon Corporation	$6,514	$42,843	15 2%
Ameren Corporation	$1,726	$10,334	16 7%
Otter Tail Corporation	$139	$808	17 2%
Atmos Energy Corporation	$825	$4,242	19 4%

Source Moody's Investors Service

This document has been prepared for the use of Kenneth Kenny and is protected by law It may not be copied, transferred or disseminated unless authorized under a contract with Moody's or otherwise authorized in writing by Moody's

Utilities view dividend reductions as a last resort

Dividend reductions are uncommon in the utilities sector and companies usually consider them only after taking other credit strengthening measures, such as curtailing discretionary capital expenditures and reducing O&M costs Nevertheless, during times of market volatility, shifting macroeconomic fundamentals, or company-specific developments that stress liquidity, some utilities have turned to sharp reductions (or suspensions) of their dividend to conserve cash, as shown in Exhibit 5

Exhibit 3

Historical dividend reductions have been used as a means to conserve cash when necessary

US regulated utility dividend reductions and suspensions since 2008

Company	Year	Previous year payout ratio	% reduction in dividend	Year over year cash savings ($mm) [1]	Primary driver
CenterPoint Energy, Inc	2020	86%	48%	$275	Underperforming midstream investment
SCANA Corporation	2018	-295%	80%	$135	Abandonment of nuclear project
PG&E Corporation	2017	69%	100%	$1,021	California wildfires
FirstEnergy Corp	2014	176%	35%	$316	Underperforming unregulated power business
Exelon Corporation	2013	148%	41%	$467	Underperforming unregulated power business
Empire District Electric Company	2011	109%	100%	$25	Service territory devastated by tornado
Ameren Corporation	2009	88%	39%	$196	Unregulated power, challenging business and financial market conditions
Great Plains Energy, Inc	2009	144%	50%	$62	Economic and financial market uncertainty
Constellation Energy Group, Inc	2009	-26%	50%	$108	Unregulated power, challenging business and financial market conditions
PNM Resources, Inc	2008	94%	46%	$13	Underperforming unregulated electric retail business

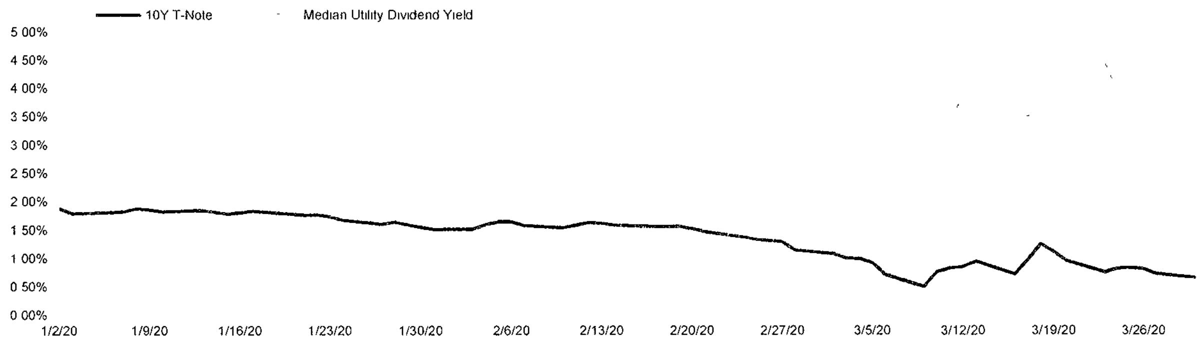
[1] Represents the difference between total cash dividends paid in the year the dividend reduction took effect and the previous year, CenterPoint estimated based on difference in annualized dividends per share and 2019 average shares outstanding
Sources Company documents and Moody's Investors Service

The recent widening in the spread between 10-year US Treasury yields and the median utility dividend yield indicates a degree of investor uncertainty about the sustainability of dividends For the companies included in this report, we saw the 2020 year-to-date median dividend yield peak in March at 4 5%, with the dividend yields of CenterPoint and PPL Corporation (Baa2 stable) far exceeding the median at 9 6% and 8 9%, respectively

Exhibit 4

Widening spread points to investor uncertainty about dividend sustainability

Year-to-date median dividend yield of US utility holding companies and 10-year US Treasury yields as of 30 March 2020



Note Median utility dividend yield based on the 38 electric and gas utility parent companies identified in this report
Source FactSet

This document has been prepared for the use of Kenneth Kenny and is protected by law It may not be copied, transferred or disseminated unless authorized under a contract with Moody's or otherwise authorized in writing by Moody's

Appendix

Exhibit 5
Governance scores for publicly traded North American utilities and power companies

Issuer	LT Rating	CGA Assessment	Overall Score	Voting Rights and Ownership Score	Voting Rights and Ownership Strength Ind.	Related Party Transactions Score	Related Party Transactions Strength Ind.	Compensation Disclosure Score	Compensation Disclosure Strength Ind	Compensation Design Score	Compensation Design Strength Ind	Board Leadership & Independence Score	Board Leadership & Independence Strength Ind	Director Qualifications, Experience & Refreshment Score	Director Qualifications, Experience & Refreshment Strength Ind.	Financial Oversight & Capital Allocation 20% Score	Financial Oversight & Capital Allocation 20% Strength Ind.	Transparency of Financial Reporting Score	Transparency of Financial Reporting Strength Ind	Audit Quality Score	Audit Quality Strength Ind	Compliance Controls Score	Compliance Controls Strength Ind.
AES Corporation (The)	Ba1	GA-1	3.10	1	Highest	2	Highest	0	Highest	8	Moderate	5	Highest	1	Highest	6	High	0	Highest	0	Highest	3	Highest
ALLETE Inc	Baa1	GA-2	3.80	1	Highest	0	Highest	0	Highest	6	High	7	High	8	Moderate	7	Moderate	0	Highest	0	Highest	3	Highest
Alliant Energy Corporation	Baa2	GA-1	3.40	1	Highest	0	Highest	1	Highest	5	High	6	High	7	High	6	High	0	Highest	0	Highest	3	Highest
Ameren Corporation	Baa1	GA-1	3.10	1	Highest	0	Highest	0	Highest	10	Low	7	High	3	Highest	4	Highest	0	Highest	0	Highest	3	Highest
American Electric Power Company Inc	Baa1	GA-1	2.83	0	Highest	0	Highest	0	Highest	8	Moderate	3	Highest	2	Highest	7	Moderate	0	Highest	0	Highest	2	Highest
American Water Works Company Inc	Baa1	GA-1	3.43	1	Highest	2	Highest	0	Highest	7	Moderate	2	Highest	9	Moderate	6	High	0	Highest	0	Highest	2	Highest
Aqua America Inc	Baa2	GA-2	4.16	2	Highest	2	Highest	0	Highest	5	High	9	Moderate	3	Highest	9	Low	0	Highest	1	Highest	3	Highest
Atmos Energy Corporation	A1	GA-2	4.40	0	Highest	1	Highest	0	Highest	9	Moderate	8	Moderate	10	Moderate	7	Moderate	0	Highest	0	Highest	3	Highest
Avangrid Inc	Baa1	GA-3	4.70	4	High	1	Highest	0	Highest	5	High	15	Low	4	Highest	7	Moderate	1	Highest	2	High	3	Highest
Avista Corp	Baa2	GA-1	3.40	1	Highest	0	Highest	1	Highest	6	High	5	Highest	5	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
Black Hills Corporation	Baa2	GA-2	4.10	1	Highest	2	Highest	0	Highest	9	Moderate	9	Moderate	4	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
CenterPoint Energy Inc	Baa2	GA-1	3.30	1	Highest	0	Highest	0	Highest	7	Moderate	7	High	2	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
CMS Energy Corporation	Baa1	GA-1	2.33	1	Highest	0	Highest	0	Highest	6	High	6	High	3	Highest	3	Highest	0	Highest	0	Highest	2	Highest
Consolidated Edison, Inc	Baa2	GA-2	4.03	1	Highest	1	Highest	0	Highest	7	Moderate	6	High	10	Moderate	7	Moderate	0	Highest	0	Highest	2	Highest
Dominion Energy, Inc	Baa2	GA-1	3.33	1	Highest	1	Highest	0	Highest	5	High	6	High	7	High	6	High	0	Highest	0	Highest	2	Highest
DTE Energy Company	Baa2	GA-2	3.63	1	Highest	2	Highest	0	Highest	8	Moderate	7	High	3	Highest	7	Moderate	0	Highest	0	Highest	2	Highest
Duke Energy Corporation	Baa1	GA-2	3.53	1	Highest	2	Highest	1	Highest	8	Moderate	6	High	2	Highest	7	Moderate	0	Highest	0	Highest	2	Highest
Edison International	Baa3	GA-1	2.90	0	Highest	1	Highest	0	Highest	7	Moderate	1	Highest	4	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
El Paso Electric Company	Baa2	GA-2	4.06	1	Highest	2	Highest	0	Highest	7	Moderate	4	Highest	10	Moderate	7	Moderate	0	Highest	1	Highest	3	Highest
Emera Inc	Baa3	GA-1	3.00	1	Highest	2	Highest	0	Highest	6	High	1	Highest	4	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
Enbridge Inc	Baa2	GA-1	3.30	1	Highest	1	Highest	0	Highest	5	High	9	Moderate	1	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
Entergy Corporation	Baa2	GA-2	3.70	1	Highest	0	Highest	0	Highest	9	Moderate	7	High	6	High	6	High	0	Highest	1	Highest	2	Highest
Eversource Energy	Baa1	GA-2	3.93	1	Highest	0	Highest	0	Highest	11	Low	6	High	4	Highest	7	Moderate	0	Highest	0	Highest	5	High
Exelon Corporation	Baa2	GA-1	2.23	0	Highest	0	Highest	1	Highest	7	Moderate	4	Highest	1	Highest	4	Highest	0	Highest	0	Highest	2	Highest
FirstEnergy Corp	Baa3	GA-1	3.26	1	Highest	2	Highest	0	Highest	3	Highest	5	Highest	7	High	7	Moderate	0	Highest	0	Highest	1	Highest
Fortis Inc	Baa3	GA-1	2.60	1	Highest	2	Highest	0	Highest	7	Moderate	3	Highest	1	Highest	5	High	0	Highest	0	Highest	3	Highest
IDACORP Inc	Baa1	GA-1	3.36	1	Highest	1	Highest	0	Highest	8	Moderate	5	Highest	4	Highest	7	Moderate	0	Highest	0	Highest	1	Highest
NextEra Energy Inc	Baa1	GA-1	3.50	0	Highest	1	Highest	0	Highest	5	High	7	High	6	High	7	Moderate	0	Highest	0	Highest	3	Highest
NiSource Inc	Baa2	GA-2	3.76	1	Highest	0	Highest	0	Highest	8	Moderate	5	Highest	7	High	7	Moderate	0	Highest	1	Highest	3	Highest
NorthWestern Corporation	Baa2	GA-1	2.73	1	Highest	0	Highest	0	Highest	4	Highest	4	Highest	3	Highest	7	Moderate	0	Highest	0	Highest	2	Highest
NRG Energy Inc	Ba1	GA-2	3.60	1	Highest	2	Highest	0	Highest	8	Moderate	5	Highest	6	High	6	High	0	Highest	0	Highest	3	Highest
OGE Energy Corp	(P)Baa1	GA-2	3.93	1	Highest	2	Highest	0	Highest	8	Moderate	9	Moderate	4	Highest	7	Moderate	0	Highest	0	Highest	2	Highest
ONE Gas Inc	A2	GA-2	3.76	1	Highest	2	Highest	0	Highest	7	Moderate	8	Moderate	3	Highest	7	Moderate	0	Highest	0	Highest	4	High
Otter Tail Corporation	Baa2	GA-1	3.46	2	Highest	0	Highest	0	Highest	6	High	6	High	6	High	6	High	0	Highest	0	Highest	4	High
Pattern Energy Group Inc	Ba3	GA-1	3.26	0	Highest	1	Highest	0	Highest	6	High	5	Highest	4	Highest	7	Moderate	0	Highest	0	Highest	4	High
Pinnacle West Capital Corporation	A3	GA-1	3.36	1	Highest	0	Highest	0	Highest	5	High	7	High	4	Highest	7	Moderate	0	Highest	0	Highest	4	High
PNM Resources Inc	Baa3	GA-1	3.40	1	Highest	0	Highest	0	Highest	8	Moderate	5	Highest	4	Highest	7	Moderate	0	Highest	0	Highest	3	Highest
Portland General Electric Company	A3	GA-1	3.23	0	Highest	2	Highest	0	Highest	4	Highest	4	Highest	7	High	7	Moderate	0	Highest	0	Highest	2	Highest
PPL Corporation	Baa2	GA-1	2.60	0	Highest	2	Highest	0	Highest	7	Moderate	6	High	5	Highest	3	Highest	0	Highest	0	Highest	0	Highest
Public Service Enterprise Group Incorporated	Baa1	GA-2	3.90	0	Highest	1	Highest	1	Highest	7	Moderate	4	Highest	8	Moderate	8	Moderate	0	Highest	0	Highest	3	Highest
Sempra Energy	Baa1	GA-2	3.60	1	Highest	0	Highest	0	Highest	10	Low	6	High	5	Highest	6	High	0	Highest	0	Highest	3	Highest
Southern Company (The)	Baa2	GA-2	3.80	1	Highest	1	Highest	0	Highest	6	High	8	Moderate	6	High	7	Moderate	0	Highest	1	Highest	2	Highest
Southwest Gas Holdings Inc	Baa1	GA-2	3.76	1	Highest	0	Highest	0	Highest	6	High	6	High	8	Moderate	7	Moderate	0	Highest	0	Highest	4	High
Spire Inc	Baa2	GA-1	3.30	1	Highest	0	Highest	0	Highest	6	High	3	Highest	7	High	7	Moderate	0	Highest	0	Highest	3	Highest
TC Energy Corporation	Baa2	GA-2	3.56	1	Highest	4	Moderate	0	Highest	8	Moderate	3	Highest	1	Highest	8	Moderate	0	Highest	0	Highest	4	High
TransAlta Corporation	Ba1	GA-1	3.20	2	Highest	4	Moderate	0	Highest	6	High	4	Highest	2	Highest	6	High	0	Highest	0	Highest	3	Highest
Unitil Corporation	Baa2	GA-1	3.50	0	Highest	0	Highest	0	Highest	4	Highest	9	Moderate	8	Moderate	6	High	0	Highest	0	Highest	3	Highest
Vistra Energy Corp	Ba1	GA-1	2.86	1	Highest	2	Highest	0	Highest	3	Highest	7	High	3	Highest	6	High	0	Highest	0	Highest	1	Highest
WEC Energy Group Inc	Baa1	GA-2	3.93	1	Highest	2	Highest	0	Highest	8	Moderate	5	Highest	8	Moderate	7	Moderate	0	Highest	0	Highest	2	Highest
Xcel Energy Inc	Baa1	GA-2	3.70	0	Highest	0	Highest	0	Highest	7	Moderate	6	High	8	Moderate	7	Moderate	0	Highest	0	Highest	3	Highest

Source. Moody's Investors Service

This document has been prepared for the use of Kenneth Kenny and is protected by law It may not be copied, transferred or disseminated unless authorized under a contract with Moody's or otherwise authorized in writing by Moody's

Moody's related publications

Sector Comments

» Regulated Electric and Gas Utilities – US: FAQ on credit implications of the coronavirus outbreak, March 2020

» Regulated Electric, Gas and Water Utilities – US: Utilities demonstrate credit resilience in the face of coronavirus disruptions, March 2020

» Credit Conditions – Global: Coronavirus and oil price shocks: managing ratings in turbulent times, March 2020

» Regulated electric utilities – North America: Bill proposing fines for power shutoffs is credit negative for California utilities, January 2020

» Regulated electric and gas utilities – US: California's wildfire fund is sufficiently capitalized to pay out claims, November 2019

» Regulated electric and gas utilities – New York: Threat to revoke National Grid's operating license is credit negative for utilities, November 2019

Sector In-Depth

» Regulated electric and gas utilities – US: Grid hardening, regulatory support key to credit quality as climate hazards worsen, March 2020

» Regulated electric utilities – US: Intensifying climate hazards to heighten focus on infrastructure investments, January 2020

» Regulated electric and gas utilities – New York: Threat to revoke National Grid's operating license is credit negative for utilities, November 2019

» Electric utilities and power producers – US: Power companies on pace to reduce CO2 emissions, September 2019

» Utilities and power companies – North America: Corporate governance assessments show generally credit-friendly characteristics, September 2019

» Regulated electric and gas utilities – US: Recent regulatory, legislative developments have been largely credit positive, September 2019

» Regulated electric and gas utilities – North America: Free cash flow and capital allocation: External capital needs to decline in 2019, August 2019

» Regulated electric utilities – US: Proposed California wildfire risk legislation is credit positive but questions remain, July 2019

» Electric and gas – US: Pipeline cybersecurity standards help plug security loophole in utility supply chain, July 2019

» Regulated water utilities – US: M&A expands to cross-sector deals, with mixed credit implications for acquirers, March 2019

» Regulated Utilities and Power – US: PG&E bankruptcy highlights environmental, social and governance risk in California, February 2019

Outlooks

» Global Macro Outlook 2020-21 (March 25, 2020 Update): The coronavirus will cause unprecedented shock to the global economy, March 2020

» Regulated electric and gas utilities – US: 2020 outlook moves to stable on supportive regulation, weaker but steady credit metrics, November 2019

To access any of these reports, click on the entry above Note that these references are current as of the date of publication of this report and that more recent reports may be available All research may not be available to all clients

This document has been prepared for the use of Kenneth Kenny and is protected by law It may not be copied, transferred or disseminated unless authorized under a contract with Moody's or otherwise authorized in writing by Moody's

© 2020 Moody's Corporation, Moody's Investors Service, Inc., Moody's Analytics, Inc. and/or their licensors and affiliates (collectively, "MOODY'S"). All rights reserved.

CREDIT RATINGS ISSUED BY MOODY'S INVESTORS SERVICE, INC. AND/OR ITS CREDIT RATINGS AFFILIATES ARE MOODY'S CURRENT OPINIONS OF THE RELATIVE FUTURE CREDIT RISK OF ENTITIES, CREDIT COMMITMENTS, OR DEBT OR DEBT-LIKE SECURITIES, AND MATERIALS, PRODUCTS, SERVICES AND INFORMATION PUBLISHED BY MOODY'S (COLLECTIVELY, "PUBLICATIONS") MAY INCLUDE SUCH CURRENT OPINIONS. MOODY'S INVESTORS SERVICE DEFINES CREDIT RISK AS THE RISK THAT AN ENTITY MAY NOT MEET ITS CONTRACTUAL FINANCIAL OBLIGATIONS AS THEY COME DUE AND ANY ESTIMATED FINANCIAL LOSS IN THE EVENT OF DEFAULT OR IMPAIRMENT. SEE MOODY'S RATING SYMBOLS AND DEFINITIONS PUBLICATION FOR INFORMATION ON THE TYPES OF CONTRACTUAL FINANCIAL OBLIGATIONS ADDRESSED BY MOODY'S INVESTORS SERVICE CREDIT RATINGS. CREDIT RATINGS DO NOT ADDRESS ANY OTHER RISK, INCLUDING BUT NOT LIMITED TO: LIQUIDITY RISK, MARKET VALUE RISK, OR PRICE VOLATILITY. CREDIT RATINGS, NON-CREDIT ASSESSMENTS ("ASSESSMENTS"), AND OTHER OPINIONS INCLUDED IN MOODY'S PUBLICATIONS ARE NOT STATEMENTS OF CURRENT OR HISTORICAL FACT. MOODY'S PUBLICATIONS MAY ALSO INCLUDE QUANTITATIVE MODEL-BASED ESTIMATES OF CREDIT RISK AND RELATED OPINIONS OR COMMENTARY PUBLISHED BY MOODY'S ANALYTICS, INC. AND/OR ITS AFFILIATES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT CONSTITUTE OR PROVIDE INVESTMENT OR FINANCIAL ADVICE, AND MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT AND DO NOT PROVIDE RECOMMENDATIONS TO PURCHASE, SELL, OR HOLD PARTICULAR SECURITIES. MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS DO NOT COMMENT ON THE SUITABILITY OF AN INVESTMENT FOR ANY PARTICULAR INVESTOR. MOODY'S ISSUES ITS CREDIT RATINGS, ASSESSMENTS AND OTHER OPINIONS AND PUBLISHES ITS PUBLICATIONS WITH THE EXPECTATION AND UNDERSTANDING THAT EACH INVESTOR WILL, WITH DUE CARE, MAKE ITS OWN STUDY AND EVALUATION OF EACH SECURITY THAT IS UNDER CONSIDERATION FOR PURCHASE, HOLDING, OR SALE.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS, AND PUBLICATIONS ARE NOT INTENDED FOR USE BY RETAIL INVESTORS AND IT WOULD BE RECKLESS AND INAPPROPRIATE FOR RETAIL INVESTORS TO USE MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS OR PUBLICATIONS WHEN MAKING AN INVESTMENT DECISION. IF IN DOUBT YOU SHOULD CONTACT YOUR FINANCIAL OR OTHER PROFESSIONAL ADVISER. ALL INFORMATION CONTAINED HEREIN IS PROTECTED BY LAW, INCLUDING BUT NOT LIMITED TO, COPYRIGHT LAW, AND NONE OF SUCH INFORMATION MAY BE COPIED OR OTHERWISE REPRODUCED, REPACKAGED, FURTHER TRANSMITTED, TRANSFERRED, DISSEMINATED, REDISTRIBUTED OR RESOLD, OR STORED FOR SUBSEQUENT USE FOR ANY SUCH PURPOSE, IN WHOLE OR IN PART, IN ANY FORM OR MANNER OR BY ANY MEANS WHATSOEVER, BY ANY PERSON WITHOUT MOODY'S PRIOR WRITTEN CONSENT.

MOODY'S CREDIT RATINGS, ASSESSMENTS, OTHER OPINIONS AND PUBLICATIONS ARE NOT INTENDED FOR USE BY ANY PERSON AS A BENCHMARK AS THAT TERM IS DEFINED FOR REGULATORY PURPOSES AND MUST NOT BE USED IN ANY WAY THAT COULD RESULT IN THEM BEING CONSIDERED A BENCHMARK.

All information contained herein is obtained by MOODY'S from sources believed by it to be accurate and reliable. Because of the possibility of human or mechanical error as well as other factors, however, all information contained herein is provided "AS IS" without warranty of any kind. MOODY'S adopts all necessary measures so that the information it uses in assigning a credit rating is of sufficient quality and from sources MOODY'S considers to be reliable including, when appropriate, independent third-party sources. However, MOODY'S is not an auditor and cannot in every instance independently verify or validate information received in the rating process or in preparing its Publications.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability to any person or entity for any indirect, special, consequential, or incidental losses or damages whatsoever arising from or in connection with the information contained herein or the use of or inability to use any such information, even if MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers is advised in advance of the possibility of such losses or damages, including but not limited to: (a) any loss of present or prospective profits or (b) any loss or damage arising where the relevant financial instrument is not the subject of a particular credit rating assigned by MOODY'S.

To the extent permitted by law, MOODY'S and its directors, officers, employees, agents, representatives, licensors and suppliers disclaim liability for any direct or compensatory losses or damages caused to any person or entity, including but not limited to by any negligence (but excluding fraud, willful misconduct or any other type of liability that, for the avoidance of doubt, by law cannot be excluded) on the part of, or any contingency within or beyond the control of, MOODY'S or any of its directors, officers, employees, agents, representatives, licensors or suppliers, arising from or in connection with the information contained herein or the use of or inability to use any such information.

NO WARRANTY, EXPRESS OR IMPLIED, AS TO THE ACCURACY, TIMELINESS, COMPLETENESS, MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF ANY CREDIT RATING, ASSESSMENT, OTHER OPINION OR INFORMATION IS GIVEN OR MADE BY MOODY'S IN ANY FORM OR MANNER WHATSOEVER.

Moody's Investors Service, Inc., a wholly-owned credit rating agency subsidiary of Moody's Corporation ("MCO"), hereby discloses that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by Moody's Investors Service, Inc. have, prior to assignment of any credit rating, agreed to pay to Moody's Investors Service, Inc. for credit ratings opinions and services rendered by it fees ranging from $1,000 to approximately $2,700,000. MCO and Moody's investors Service also maintain policies and procedures to address the independence of Moody's Investors Service credit ratings and credit rating processes. Information regarding certain affiliations that may exist between directors of MCO and rated entities, and between entities who hold credit ratings from Moody's Investors Service and have also publicly reported to the SEC an ownership interest in MCO of more than 5%, is posted annually at www.moodys.com under the heading "Investor Relations — Corporate Governance — Director and Shareholder Affiliation Policy."

Additional terms for Australia only: Any publication into Australia of this document is pursuant to the Australian Financial Services License of MOODY'S affiliate, Moody's Investors Service Pty Limited ABN 61 003 399 657AFSL 336969 and/or Moody's Analytics Australia Pty Ltd ABN 94 105 136 972 AFSL 383569 (as applicable). This document is intended to be provided only to "wholesale clients" within the meaning of section 761G of the Corporations Act 2001. By continuing to access this document from within Australia, you represent to MOODY'S that you are, or are accessing the document as a representative of, a "wholesale client" and that neither you nor the entity you represent will directly or indirectly disseminate this document or its contents to "retail clients" within the meaning of section 761G of the Corporations Act 2001. MOODY'S credit rating is an opinion as to the creditworthiness of a debt obligation of the issuer, not on the equity securities of the issuer or any form of security that is available to retail investors.

Additional terms for Japan only: Moody's Japan K.K. ("MJKK") is a wholly-owned credit rating agency subsidiary of Moody's Group Japan G.K., which is wholly-owned by Moody's Overseas Holdings Inc., a wholly-owned subsidiary of MCO. Moody's SF Japan K.K. ("MSFJ") is a wholly-owned credit rating agency subsidiary of MJKK. MSFJ is not a Nationally Recognized Statistical Rating Organization ("NRSRO"). Therefore, credit ratings assigned by MSFJ are Non-NRSRO Credit Ratings. Non-NRSRO Credit Ratings are assigned by an entity that is not a NRSRO and, consequently, the rated obligation will not qualify for certain types of treatment under U.S. laws. MJKK and MSFJ are credit rating agencies registered with the Japan Financial Services Agency and their registration numbers are FSA Commissioner (Ratings) No. 2 and 3 respectively.

MJKK or MSFJ (as applicable) hereby disclose that most issuers of debt securities (including corporate and municipal bonds, debentures, notes and commercial paper) and preferred stock rated by MJKK or MSFJ (as applicable) have, prior to assignment of any credit rating, agreed to pay to MJKK or MSFJ (as applicable) for credit ratings opinions and services rendered by it fees ranging from JPY125,000 to approximately JPY250,000,000.

MJKK and MSFJ also maintain policies and procedures to address Japanese regulatory requirements.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moodys.com for the most updated credit rating action information and rating history.

REPORT NUMBER 1221667

MOODY'S
INVESTORS SERVICE

This document has been prepared for the use of Kenneth Kenny and is protected by law. It may not be copied, transferred or disseminated unless authorized under a contract with Moody's or otherwise authorized in writing by Moody's.

Section 1: 10-K (AMERICAN ELECTRIC POWER 2019 10-K)

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 10-K

(Mark One)

☒ ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended **December 31, 2019**
or
☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _________ to________

Commission File Number	Registrants; Address and Telephone Number	States of Incorporation	I.R.S. Employer Identification Nos.
1-3525	AMERICAN ELECTRIC POWER CO INC.	New York	13-4922640
333-221643	AEP TEXAS INC.	Delaware	51-0007707
333-217143	AEP TRANSMISSION COMPANY, LLC	Delaware	46-1125168
1-3457	APPALACHIAN POWER COMPANY	Virginia	54-0124790
1-3570	INDIANA MICHIGAN POWER COMPANY	Indiana	35-0410455
1-6543	OHIO POWER COMPANY	Ohio	31-4271000
0-343	PUBLIC SERVICE COMPANY OF OKLAHOMA	Oklahoma	73-0410895
1-3146	SOUTHWESTERN ELECTRIC POWER COMPANY	Delaware	72-0323455
	1 Riverside Plaza, Columbus, Ohio 43215-2373		
	Telephone (614) 716-1000		

Securities registered pursuant to Section 12(b) of the Act:

Registrant	Title of each class	Trading Symbol	Name of Each Exchange on Which Registered
American Electric Power Company Inc.	Common Stock, $6.50 par value	AEP	New York Stock Exchange
American Electric Power Company Inc.	6.125% Corporate Units	AEP PR B	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

Indicate by check mark if the registrant American Electric Power Company, Inc., AEP Transmission Company, LLC, Indiana Michigan Power Company and Southwestern Electric Power Company, are well-known seasoned issuers, as defined in Rule 405 of the Securities Act.	Yes	x	No	¨
Indicate by check mark if the registrants AEP Texas Inc., Appalachian Power Company, Ohio Power Company, Public Service Company of Oklahoma, are well-known seasoned issuers, as defined in Rule 405 of the Securities Act.	Yes	¨	No	x
Indicate by check mark if the registrants are not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act.	Yes	¨	No	x
Indicate by check mark whether the registrants (1) have filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrants were required to file such reports), and (2) have been subject to such filing requirements for the past 90 days	Yes	x	No	¨
Indicate by check mark whether the registrants have submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).	Yes	x	No	¨

Indicate by check mark whether American Electric Power Company, Inc. is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated filer	x	Accelerated filer	☐	Non-accelerated filer	☐
Smaller reporting company	☐	Emerging growth company	☐		

Indicate by check mark whether AEP Texas Inc., AEP Transmission Company, LLC, Appalachian Power Company, Indiana Michigan Power Company, Ohio Power Company, Public Service Company of Oklahoma and Southwestern Electric Power Company are large accelerated filers, accelerated filers, non-accelerated filers, smaller reporting companies, or emerging growth companies. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large Accelerated filer	☐	Accelerated filer	☐	Non-accelerated filer	x
Smaller reporting company	☐	Emerging growth company	☐		

If an emerging growth company, indicate by check mark if the registrants have elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

☐

Indicate by check mark whether the registrants are shell companies (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No x

AEP Texas Inc., AEP Transmission Company, LLC, Appalachian Power Company, Indiana Michigan Power Company, Ohio Power Company, Public Service Company of Oklahoma and Southwestern Electric Power Company meet the conditions set forth in General Instruction I(1)(a) and (b) of Form 10-K and are therefore filing this Form 10-K with the reduced disclosure format specified in General Instruction I(2) to such Form 10-K.

	Aggregate Market Value of Voting and Non-Voting Common Equity Held by Nonaffiliates of the Registrants as of June 30, 2019 the Last Trading Date of the Registrants' Most Recently Completed Second Fiscal Quarter	Number of Shares of Common Stock Outstanding of the Registrants as of December 31, 2019
American Electric Power Company, Inc.	$43,491,855,142	494,169,471
		($6.50 par value)
AEP Texas Inc.	None	100
		($0.01 par value)
AEP Transmission Company, LLC (a)	None	NA
Appalachian Power Company	None	13,499,500
		(no par value)
Indiana Michigan Power Company	None	1,400,000
		(no par value)
Ohio Power Company	None	27,952,473
		(no par value)
Public Service Company of Oklahoma	None	9,013,000
		($15 par value)
Southwestern Electric Power Company	None	7,536,640
		($18 par value)

(a) 100% interest is held by AEP Transmission Holdco.
NA Not applicable.

Note on Market Value of Common Equity Held by Nonaffiliates

American Electric Power Company, Inc. owns all of the common stock of AEP Texas Inc., Appalachian Power Company, Indiana Michigan Power Company, Ohio Power Company, Public Service Company of Oklahoma and Southwestern Electric Power Company and all of the LLC membership interest in AEP Transmission Company, LLC (see Item 12 herein).

Documents Incorporated By Reference

Description	Part of Form 10-K into which Document is Incorporated
Portions of Annual Reports of the following companies for the fiscal year ended December 31, 2019: American Electric Power Company, Inc. AEP Texas Inc. AEP Transmission Company, LLC Appalachian Power Company Indiana Michigan Power Company Ohio Power Company Public Service Company of Oklahoma Southwestern Electric Power Company	Part II
Portions of Proxy Statement of American Electric Power Company, Inc. for 2020 Annual Meeting of Shareholders.	Part III

This combined Form 10-K is separately filed by American Electric Power Company, Inc., AEP Texas Inc., AEP Transmission Company, LLC, Appalachian Power Company, Indiana Michigan Power Company, Ohio Power Company, Public Service Company of Oklahoma and Southwestern Electric Power Company. Information contained herein relating to any individual registrant is filed by such registrant on its own behalf. Except for American Electric Power Company, Inc., each registrant makes no representation as to information relating to the other registrants.

You can access financial and other information at AEP's website, including AEP's Principles of Business Conduct, certain committee charters and Principles of Corporate Governance. The address is www.AEP.com. Investors can obtain copies of our SEC filings from this site free of charge, as well as from the SEC website at www.sec.gov.

TABLE OF CONTENTS